

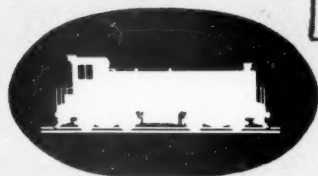
JUN 20 1935

JUNE 15, 1935

Railway Age

FOUNDED IN 1856

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RAILWAY AGE

President Roosevelt's Message on Transportation

Last week President Roosevelt sent to Congress his long expected message advocating transportation legislation. He favored further modification of the Federal Bankruptcy Act; passage by the House of the bill for regulation of highway carriers, which already has passed the Senate; regulation, also, of air and inter-coastal and inland waterway carriers by the Interstate Commerce Commission; and extension of the Emergency Railroad Transportation Act and of the office of co-ordinator for at least another year.

Probably no transportation interest is entirely satisfied with the message. The railways would have preferred that the President should not have recommended extension of the Emergency Transportation Act. They believe that solution of the problems of railway co-ordination should be left to the Association of American Railroads, free from the official criticism and pressure now received from the co-ordinator and his staff. They regret that the President did not indorse the Pettengill bill for repeal of the long-and-short-haul section of the Interstate Commerce Act. Other carriers may not like the recommendations for their regulation by the Interstate Commerce Commission, although there is at present less opposition to such regulation, especially by operators of regular highway service, than in the past.

Similar Regulation for All Carriers

The agitation for regulation of other carriers comparable with that applied to the railways was begun about six years ago. It was long strongly and even bitterly opposed. That it is now advocated in a presidential message is highly significant as respects the effectiveness of the work of educating official and public sentiment that has been carried on. There are some statements in the President's message of hardly less significance than what he says about regulation. He refers to "great expenditures of government funds for the development of waterways and for the building of great highways" as having helped to enlarge the transportation problem "far beyond that conception which dominated most of our past legislation on the subject." He says, "In some instances the government has helped a little. In others it retarded. In still others it has given special assistance from time to time—in many

instances without rhyme nor reason." Such statements must imply condemnation of reckless government expenditures to subsidize railway competitors, although they are not otherwise alluded to.

It is essential that Congress and the public shall have made clear to them the real issue presented by the President's message. This is, whether different classes of carriers competing for exactly the same passenger and freight business shall be treated entirely differently by the national government. Can anything but ignorance or intellectual dishonesty explain opposition, ostensibly in the public interest, from any source, to legislation necessary to establish equal terms of competition for all carriers?

On one side are the railroads; on the other side, carriers by air, highway and water. The service, rate-making and financing of the railways are all strictly and comprehensively regulated by the national government. Similar regulation of other carriers is opposed by certain interests and their spokesmen. Reasonableness and fairness require that they present specifically the grounds for their opposition, and the exact alternative policy they favor. But they do not.

How Much Competition?

When called upon to do so some of them reply that competition in transportation is in the public interest. But how much and what kind of competition? They don't say. Present government policies allow other carriers to use every means they please to take traffic from the railways, but forbid the railways, under severe penalties, to use most of the same means to get and hold traffic. What rational argument for thus handicapping competition by the principal and most essential means of transportation can possibly be made by persons who at the same time contend that competition is desirable?

Some contend that regulation of railways should be reduced rather than regulation of other carriers increased. To equalize competitive conditions without increasing regulation of other carriers would require that the provisions of the Interstate Commerce Act (1) limiting increases and reductions of railway service, (2) prohibiting unfair railway discriminations, and (3) compelling the railways to publish and maintain

their rates until authorized by the Interstate Commerce Commission to change them, should all be repealed. It would also require repeal of the Railway Labor Act providing for government intervention in controversies regarding working conditions and wages, and of the Emergency Transportation Act, especially the labor provisions of the latter act. No one opposing regulation of other carriers has yet advocated anything approaching this much reduction of railway regulation. Why not? Simply because it would open the way for a great deal more competition than the now unregulated carriers want. It would, in fact, enable the railways to drive most other carriers out of business. Spokesmen of other carriers assert that the railways are seeking to re-establish a monopoly of transportation. The surest possible way to re-establish it would be to give the railways the same freedom from regulation that their competitors now have.

The Neglected Question of Subsidies

On the other hand, continuance of present government policies would enable other carriers to take so much traffic from the railways as permanently to cripple the nation's most important and vital agencies of transportation. The railways are asking that their own regulation be reduced as well as that of their competitors increased. They ask that the long-and-short haul provision of the Interstate Commerce Act be repealed to enable them to compete more effectively with other carriers, and especially inter-coastal water carriers. Every consistent advocate of less railway regulation must support this proposal. The railways are asking that regulation of service and rates similar to that applied to them be applied to other interstate carriers. Unless railway regulation is to be greatly reduced, this is plainly in the public interest. They are asking that all subsidies to their competitors be withdrawn. Subsidies were not mentioned in the President's message, but what fair or valid argument ever has been or could be advanced for the taxpayers continuing to spend many millions of dollars annually to enable other carriers to take traffic from the railways? Plainly, if they do not need subsidies they should not be given them, and if they do need them it is because they are more expensive means of transportation than the railways are. Why should the public tax itself to enable more expensive means of transportation to take traffic from cheaper means?

The President's message deals very inadequately with the transportation problem. It involves questions of subsidies and of reduction of railway regulation, especially repeal of the long-and-short haul provision, to which he did not refer. Adoption of his proposal to extend the Emergency Transportation Act probably would postpone railroad economies that otherwise would soon be effected. The message's recognition of the fairness and public need of comparable regulation of all carriers does, however, mark an advance toward the solution of the transportation problem.

Is Price the Only Consideration?

Do the railways want good ties? If so, what constructive steps are they taking to secure them? These are not new questions. Neither do they relate to a problem to which the railways have been oblivious, for many roads have long been and still are giving it very real consideration. Recent investigations indicate, however, that this attitude is by no means universal. The questions raised above are, therefore, still pertinent.

No one acquainted with the facts will deny that the railways as a whole are buying markedly better ties than they did 15 years ago. Much of the credit for this progress is due to the tie committee of the A.R.E.A. for its continued agitation of this subject. Credit is due also to certain producers, who have brought their practices into conformity with A.R.E.A. requirements and have aided in extending their adoption.

Yet investigation shows that not a few roads are still deficient in their purchasing practices and also in the manner in which they are seasoning and treating their ties. So far as purchasing is concerned, the limited demand for ties today places any road in a position to secure any grade of ties that it desires. Any road, therefore, that is now accepting ties that are inferior either as to accuracy of manufacture, to decay or other defects, or is grading them inaccurately, is doing so of its own volition, rather than by reason of a limited supply. Where such a practice prevails, it is usually defended on the ground that departures from the specifications enable the road to purchase its ties cheaper. This raises at once the question whether buying on price, at the expense of quality, is economical. It also raises a question whether any saving is actually effected, when all factors are considered.

In view of the large amount of money which a railway invests in its ties, it would appear self-evident that after buying them it is to its interest to protect this investment by seeing that they are seasoned in accordance with the best known practice. Yet an inspection of the conditions under which not a few roads are seasoning their ties discloses a situation that is far from satisfactory. In fact, the only valid explanation for the condition of some yards is that the executive engineering and purchasing officers on these roads are not familiar with the facts. Clearly, the situation is one deserving of much more attention than it is now receiving.

In these days when the limited demand places the railways in a position to obtain ties made to any reasonable requirements, and when forward-looking producers are seeking business on a basis of strict adherence to specifications, even to the extent of guaranteeing compliance with the recognized standard specifications of the A.R.E.A., the railways owe it to themselves to put their own houses in order individually in

order that their practices may become so fixed that they will not collapse under the stress of a shortage of supply and competitive buying that will arise when business revives and the roads return to the markets for enlarged requirements to make good the deficiencies of the last five years.

The Report on Earnings of Employees

The report on annual earnings of railroad employees, 1924-1933, by the section of labor relations in the Co-ordinator's organization, which we hope to find space to summarize in an early issue of *Railway Age*, is, we suppose, of some value as a sociological document. Average annual earnings of most classes of railroad employees have been relatively low during the past few years because of part-time work made necessary by the depression and high hourly wage rates. That much was known in a general way before this report appeared, and all the report has done is to confirm this generalization with detailed statistics. The section of labor relations missed a real opportunity by its failure to make any real comparison between the earnings—or the wage rates—of railroad employees and those doing similar work in competing forms of transportation. Perhaps it may see fit to remedy this omission later on.

"There are many railroad workers," says the report, "particularly in maintenance service, whose basic rates of pay have not been brought up to the minimum standards for comparable employees in other industries. For these workers minimum wage rates should be adopted. It is true that the railroad industry is faced with extremely difficult financial problems. . . ."

Precisely. The railroad industry is faced with "extremely difficult financial problems" and one of the reasons for such a situation is the fact that wage rates

of transportation employees on the railroads are two or three times as much as those of such employees in competing forms of transportation. Maintenance employees on the railroads come into competition with maintenance employees in other forms of transportation indirectly or not at all. But employees of water carriers and bus and truck drivers are in direct competition with transportation employees on the railroads and the disparity in wage rates has caused a huge diversion of traffic to railroad competitors.

It is, of course, sometimes argued that the railway wage level is no handicap in meeting motor competition because railway labor costs pro-rated over the tonnage of the average train are lower than the average labor costs per ton moved by highway. But highway carriers do not compete with the average train; they compete with the marginal train—the train which just carries enough traffic to pay out-of-pocket expenses. The labor cost per ton of such a train is much higher than the average. The railroads have to keep their rates relatively high everywhere (since railroad rates have to be uniform) to continue these marginal trains in operation. If wage rates for motor transport labor were higher or those for railroad transportation labor were lower, railroad rates could be reduced in competitive situations and traffic would thus be regained, enabling the railroads to employ more men and reduce part-time work, thus increasing annual earnings.

It is regrettable in the extreme that so many railroad employees, as shown in this report, have not been making a decent living. But it is more important to do something to correct that situation than merely to show that it exists. By showing the effect of unequal wage rates for comparable labor upon transport competition the labor relations section might provide a factual basis for corrective action. It will be unfortunate for railroad labor, and employees in competing forms of transportation as well, if it limits its observations to the narrow and unproductive field covered in its recent report.

"This Deck Has Been Stacked"

This inequitable regulation [of the railroads] is at least three-fold, to wit:

1—Railroads are held to published and authorized rates and fares, whereas their highway competitors are for the most part free to make rates "on the spot" which will capture the cream of the traffic.

2—As to two-thirds of their operating expenses, namely, labor costs, the railroads are in the grip of a federal statute which can be, and is, invoked to bring in political intervention on the side of wage-scale maintenance or increase; their competitors are free to pay the "going rate" for man-power.

3—For the taxes they pay the rail-

roads receive nothing *directly* useful to them in the conduct of their business or the provision of any part of the plant they must use for transportation; their competitors get in exchange for *their* tax payments the right of way and hard-surfaced roadbeds on which they run their trucks and buses for hire.

Here is a combination of conditions weighted against the carriers beyond any semblance of justice. The financial plight of the rail carriers is due in considerable part, of course, to the reduced total volume of traffic moving. But to attempt to dismiss their case in that fashion would fall short of common honesty. If it be argued that the

railroads must meet the going price for transportation in a competitive market, it is undeniable that they must also be free to enter that market on equal terms with all comers. If the market for transportation service must be publicly regulated, the same regulation must be equitably imposed upon all who enter it.

These are obvious principles which stand wholly apart from any question whether or not a few or all the railroads are excessively capitalized. They will have to be recognized before a beginning can be made upon the grave problem of how permanently to assure the country the transportation service it must have.

—From the Wall Street Journal



Gulf, Mobile & Northern Diesel

Gulf, Mobile & Northern Buys Motor Trains of Welded Construction

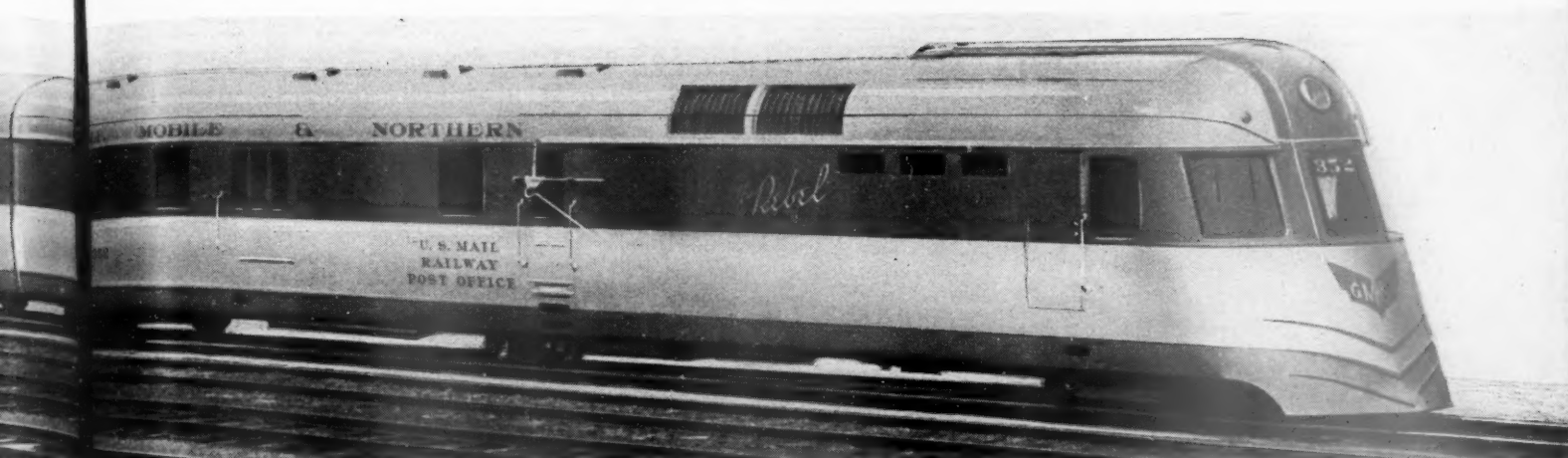
Built by American Car and Foundry Company of Cor-Ten steel,
they provide flexible facilities for comfortable travel
day and night—Exterior is streamlined



TWO fully streamlined Diesel-electric trains have been designed and built by the American Car and Foundry Company for the Gulf, Mobile & Northern, in the design of which, using U. S. S. Cor-Ten steel as the principal material of construction, a large reduction in weight has been achieved. John Wanamaker, New York, and E. I. duPont de Nemours & Company, Wilmington, Del., were consultants on color and other details of decoration.

Unlike most of the trains of light-weight streamlined construction which have been built during the past two years, the G. M. & N. trains are not articulated but are made up of completely separate coach units. Each train consists of three cars: A power car, in which is mounted a 660-hp. McIntosh & Seymour Alco type Diesel engine directly connected to a Westinghouse generator; a buffet coach with compartments for white and colored passengers, and an observation-sleeping car. Mail and baggage compartments are included in the power car. A seventh coach, without buffet facilities, is provided for use interchangeably in the two trains.

When these trains are placed in service the G. M. & N. will have completely replaced steam motive power in its passenger service with self-propelled internal-combustion equipment. The road, which in addition to its complete adoption of internal-combustion passenger motive power, has been a pioneer in passenger rate reduction, operates through-passenger service between Jackson, Tenn., on the north and New Orleans, La., and Mobile, Ala., on the south, at a rate of two cents per



Electric Streamlined Passenger Train

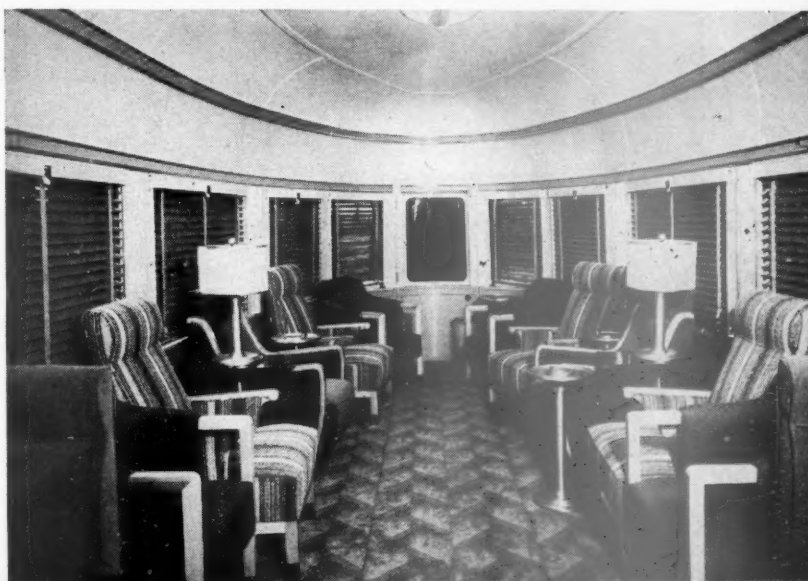
passenger-mile and without surcharge in sleeping-car fares. Since 1933 the through day run between Jackson, Tenn., and Mobile, Ala., has been operated by Brill "535" gas-electric motor cars, usually with two trailers each. This service, for the past year, cost an average of approximately 34.5 cents per train-mile, including interest, depreciation, taxes, insurance and maintenance of the motor-car and trailer coach equipment. The runs require a mileage of 409 per day.

The new Diesel-electric trains will handle the through service between Jackson, Tenn., and New Orleans, La., where it is expected to produce similarly satisfactory train-mile costs. These are night runs which will be made on a schedule of approximately twelve hours for the 488 miles in each direction, with 39 stops, including flag stops. The southern end of these runs, between Jackson, Miss., and New Orleans, a distance of 186 miles, is through a territory of relatively high population density. To meet the traffic conditions the extra coach is added to the train in the morning at Jackson, Miss., for the run to New Orleans and is returned to Jackson in the evening on the northbound trip. In this service, in addition to the coaches replaced, the two new trains will replace three steam locomotives, two for operation between Jackson, Tenn., and Bogalusa, La., and a third locomotive of lighter weight between Bogalusa and New Orleans, required because of Lake Ponchartrain bridge restrictions.

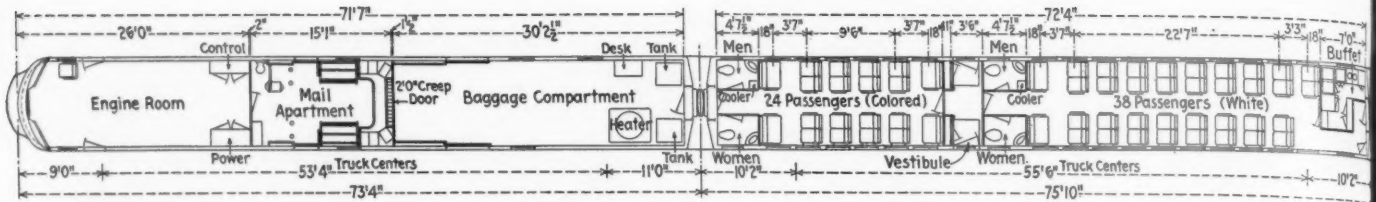
Although made up of separate coaches the trains possess unusually smooth, unbroken lines. This is due to the employment of welding by which the exterior sheathing and the frame members have been joined and the sheets joined to each other so that there is a complete absence of rivet heads or lapping of one sheet over another from one end of each car to the other. It is also due to the complete closure of the space between the ends of the cars by diaphragms which maintain the continuity of surfaces without interruption between the coaches. The curved contours of the front end of the power car are relieved by the employment of a low monitor above the engine room which is carried down over the front end to the bottom of the windows. The rear of the observation-sleeping car, following aerodynamic lines, is reduced in width and rounded at the end in



The Ladies' Dressing Room in the Sleeper



The Observation Compartment



Floor Plan of C. M. & N.

sweeping curves in which the roof hood and the skirting are blended.

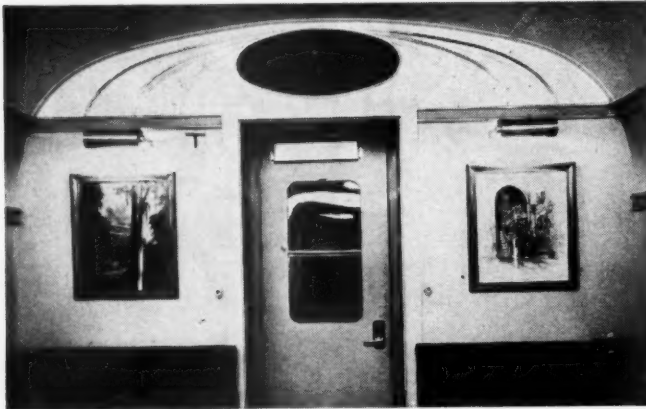
The trains are to be operated under the name of "The Rebel," to indicate the management's desire to distinguish the difference between them and traditional methods of transportation. The difference is further emphasized by the exterior color scheme and style of decoration. A broad band of Chinese red extends from 3 in. below to 2 in. above the windows and is unbroken

from the front to the rear end of the train. The roofs and the remainder of the sides are of aluminum color, except for a band of gray 11 in. wide covering the inwardly curved skirting at the bottom. The lettering is in red outlined in black and narrow stripes of black are used to separate the body colors where they join, as well as to outline the top of the letterboard space. The name of the train appears in aluminum outlined in black on the broad red band at the sides of the power car. To add to the striking appearance of the front end of the train the sides and roof of the monitor are in red and an emblem of conventionalized wings on the front below the windows is also in red with black lines and across it are the initials of the road in polished chromium. The exterior finish is done in Duco lacquer.

The use of red has not been adopted entirely for its aesthetic value; it is already a feature of the exterior finish of other motor-car equipment on the railroad because of its value in attracting attention and warning persons at highway crossings and employees in yards and along the track of the approach of a moving train.

Interior Facilities and Decoration

The buffet passenger coach weighs 94,560 lb. It is the second car in each train and is 74 ft. 4 in. long inside and 75 ft. 10 in. over the buffers when coupled.



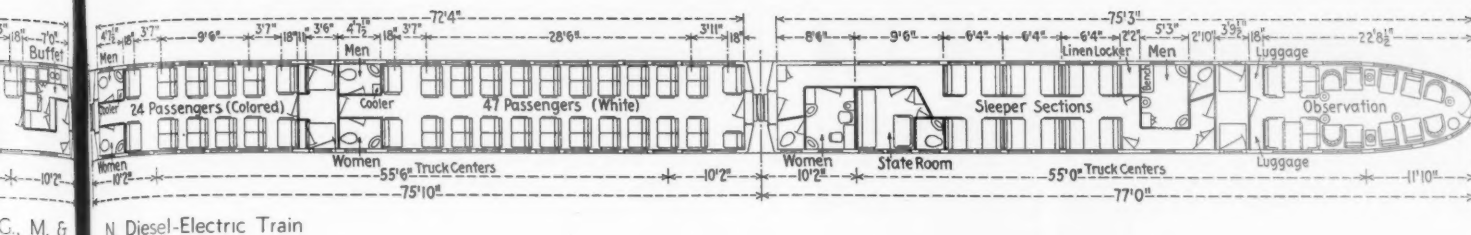
End of the Observation Compartment



In the Sleeping-Car



The "Swing" Coach



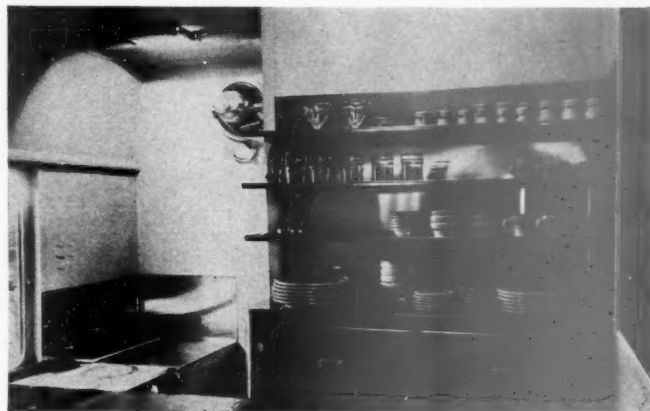
N. Diesel-Electric Train

It seats 38 persons in the white compartment and 24 in the colored compartment. The seats are of the individual non-reversible type with reclining backs, and above each is an individual basket luggage rack of polished aluminum. Each of the two compartments is provided with men's and women's toilet facilities with both hot and cold running water in the porcelain wash basins. Because of the rapid change of the atmosphere effected by the air-conditioning and ventilating system, it is considered unnecessary to provide separate smoking compartments.

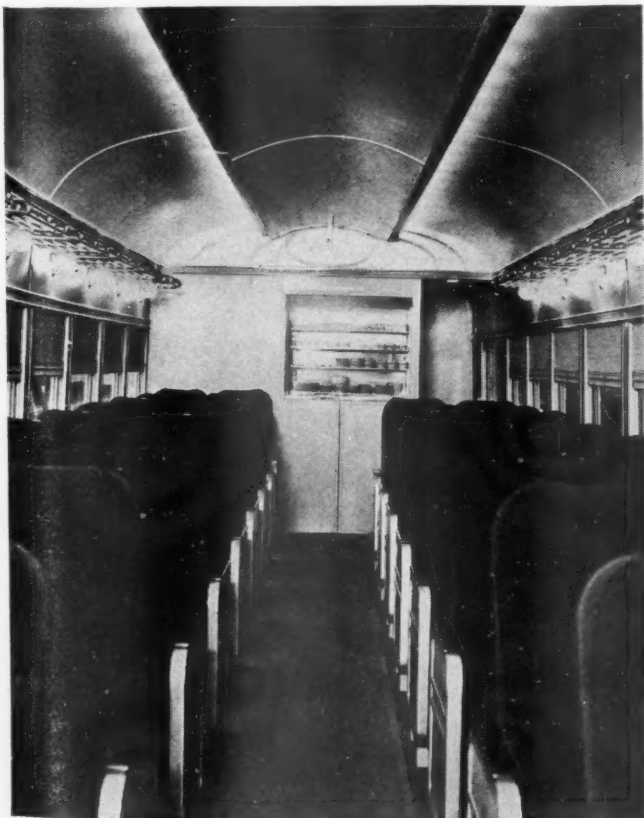
The interior finish is in ivory on the ceilings and in two tones of pastel green on the sides. The darker green is used on the wainscoting below the windows. The interiors are trimmed with polished aluminum moldings and the wainscoting color is repeated in broad stripes between two aluminum moldings at the separation of the wall and ceiling colors and again at the curtain-box molding below the luggage racks. The upholstery in the compartment for white passengers is in Massachusetts Mohair henna plush, figured with a cut stripe; that in the compartment for colored passengers is a red embossed antique leather. The Pantasote window shades are finished in green on the inside and in aluminum outside. The floor is covered with a mottled steel gray linoleum with the aisle outlined in light gray stripes.

At the rear end of the compartment for white passengers is a compact kitchen and serving compartment which is equipped to provide complete electric grill service. Departing from the customary end vestibule construction, the coach is entered by a single vestibule which is located between the two passenger compartments.

The rear car in each train is a combined sleeper-observation car which weighs 93,180 lb. This car is 74 ft.



The Kitchen in the Buffet Coach



The Buffet Coach



Spotray Lamps Light the Berths



The Vestibule

11 $\frac{1}{8}$ in. long inside and 77 ft. in length over the buffers when coupled. The sleeping compartment includes six sections, each of which is made up in the conventional upper and lower berths, and a stateroom with its own toilet room and wardrobe locker in the door of which is a full length mirror. Spacious dressing rooms are provided for men and women.

The sections are finished in a combination of ivory ceilings and pastel gray side walls with gray green on the wainscoting. The gray green is repeated in the trim. The upholstery is in a purple gray, or slate color, Chase plush, with a cut pattern of broken stripes, and the floor is covered with a carpet of egg-plant and gray in a figured basket-weave pattern. The treatment of the stateroom is in ivory and mocha with a plain rose taupe carpet and tan upholstery on the transverse sofa which is made up into the lower berth at night. Facing the sofa is a love seat which is upholstered in blue.

The lounge-observation compartment has seats for 18 persons. It is furnished with chairs of three types which are finished in three contrasting selections of upholstery. The atmosphere of informality thus effected is heightened by the tables and table lamps which form a part of the furnishing of the compartment as well as by the employment of four love seats instead of the usual built-in seat sections at the front end of the compartment.

The ceiling of the observation room is finished in ivory, with walls in sand and the base and trim in mocha. The carpet in this compartment is a striking combination of tan ground with a broken-stripe figure in black. The windows are shaded with Venetian blinds. The entrance to the sleeping-observation car is between the sleeping and observation compartments. Adjoining the vestibule

at the front end of the observation-lounge room are spacious racks for the storage of luggage.

The seventh car in the order, which will provide the additional facilities for daylight travel on the southern portion of the runs, weighs 94,670 lb. Like the buffet cars, it is 74 ft. 4 in. long inside and 75 ft. 10 in. long over the buffers when coupled. It is similar to the other two coaches except that it is not equipped with a buffet kitchen and provides seats for 47 persons in the compartment for white passengers. This "swing" coach is provided with walkover type seats so that it need not be turned around at each end of its run. In other respects it is provided with the same facilities as the buffet coaches. The decorations, however, have been varied. Like the other cars in the train the ceiling of this coach is finished in ivory. The upper side walls, and the inside of the window shades, however, are in cream and the wainscoting in mocha which is repeated in the trim between the ceiling and the side-wall colors. Like all of the passenger-carrying cars, the finish on the interior is Dulux. The seats in both the white and colored compartments are upholstered in green Shelton-Looms plush, figured in large diagonal checks.

Each coach compartment is fitted with an electrically operated water cooler and Ajax cup dispenser, recessed in one of the saloons. The toilet rooms are fitted with porcelain basins and hoppers and each is provided with a mirror and shelf.

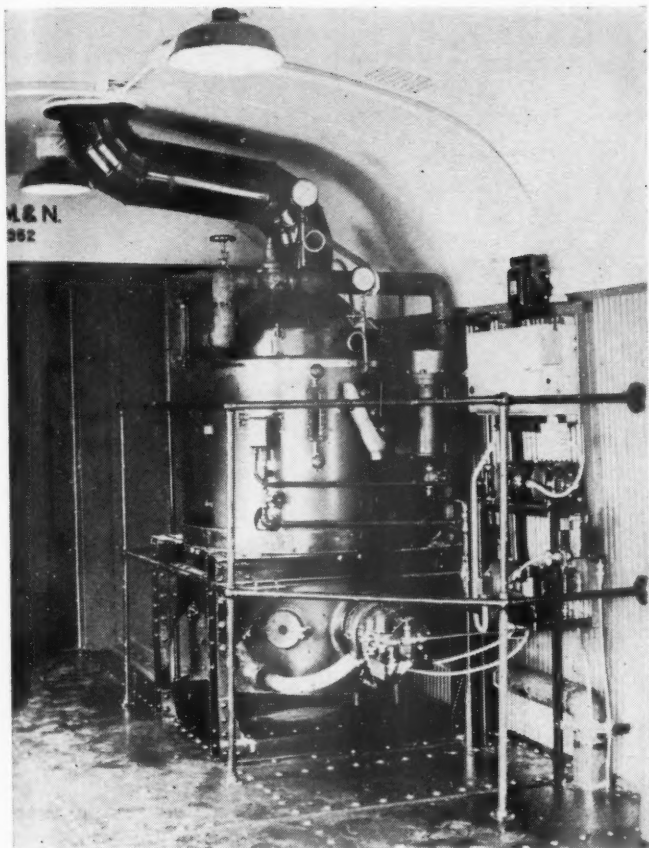
The power car is 70 ft. 6 in. long inside and when coupled is 74 ft. 5 $\frac{3}{8}$ in. over the buffers. It weighs 90,560 lb. on the rails at the front truck and 85,240 lb. at the rear or power truck. The engine room occupies 26 ft. at the front end. Immediately behind the engine room is a standard 15-ft. mail compartment. The 30 ft. 2 $\frac{1}{2}$ in. at the rear of the car is set aside for baggage, with a live load capacity of 8,000 lb. The automatic, oil-fired heating boiler is placed near the rear left-hand corner of the baggage room, each rear corner being occupied by a 300-gallon water tank for the heating boiler supply.

The Underframe Structure

Aside from the center sills the structure of the cars is built up on a framework consisting largely of pressed



The Full-Width Diaphragm



The Heating-Boiler Installation

steel members. Both the pressings and the sheets enclosing the exterior of the car are of U. S. S. Cor-Ten steel. The center sills are 8-in., 11.5-lb. channels rolled of Cor-Ten steel which are spaced 18 in. apart, back to back, and joined by a 22-in. by $\frac{3}{16}$ -in. top cover plate. The side sill is a specially formed channel of $\frac{5}{32}$ -in. material with the flanges inward and a vertical leg turned up on the inner edge of the top flange and the web shaped to conform to the curve of the sheathing.

A pressed angle stiffener of $\frac{5}{32}$ -in. material is riveted

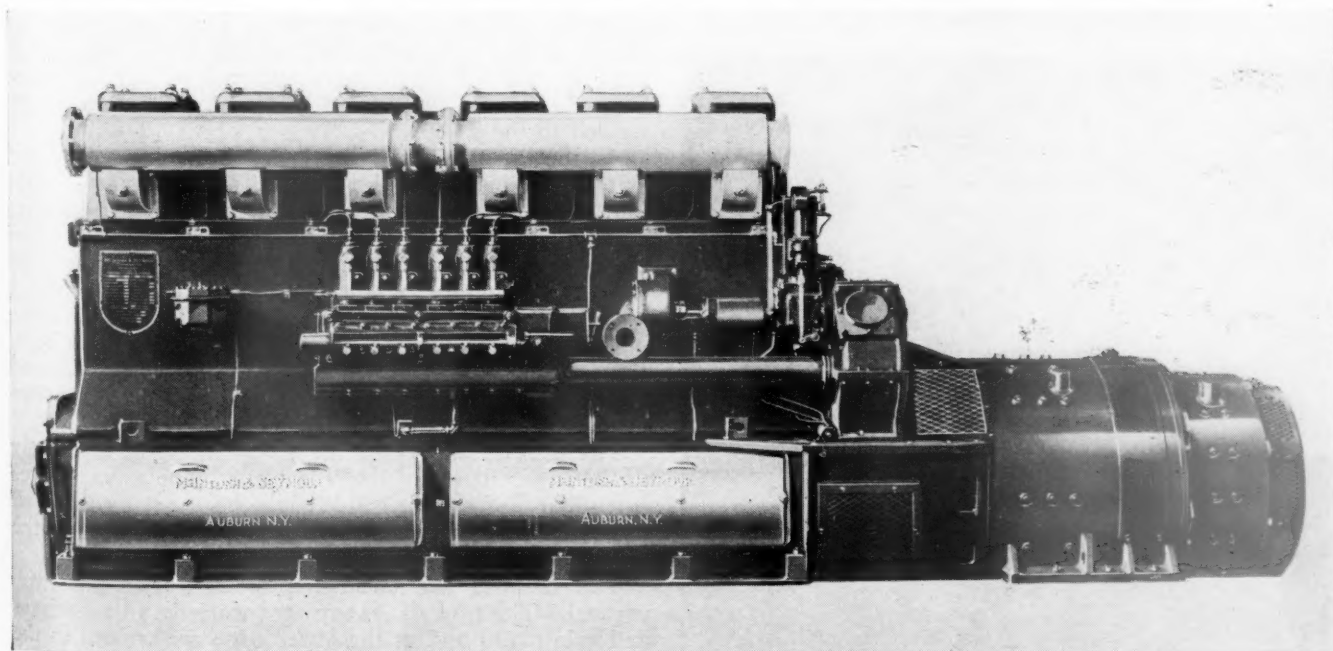
to the turned-up flange of the side sill. The horizontal leg which is placed at the bottom serves as the side floor support.

The bolsters and crossbearers are built up of pressed metal pans and cover plates. The bolster pans are of $\frac{3}{16}$ -in. material and are placed with the 3-in. flanges extending outward and joined by a $\frac{5}{16}$ -in. top cover plate, 24 in. wide, and a $\frac{3}{8}$ -in. bottom cover plate, 19 in. wide. The pans are riveted to the cover plates, center sills and bolster-center filler castings, and their outer ends are framed into the channel side sills. The crossbearers are single $\frac{5}{32}$ -in. pans with pressed fillers between the center sills. Each is provided with a $\frac{3}{16}$ -in. top cover plate, 6 in. wide, and a $\frac{5}{16}$ -in. bottom cover plate, 4 in. wide.

Where the underframe and side structure is cut away for the vestibule doors and step well the underframe is reinforced by two crossbearer diaphragms placed 2 ft. 3½ in. apart and covered by a $\frac{1}{8}$ -in. plate, 30 in. wide, which extends completely across the car over the center-sill cover plate and is riveted to the center sills and diaphragms. Individual bottom cover plates, 5¼ in. wide and of ¼-in. material, are riveted to the side sills and center sills as well as to the under side of each of these diaphragms. A bottom cover plate is also applied to the center sills at this location for a distance of 8 ft. 9⅞ in.

How the Sides Were Fabricated

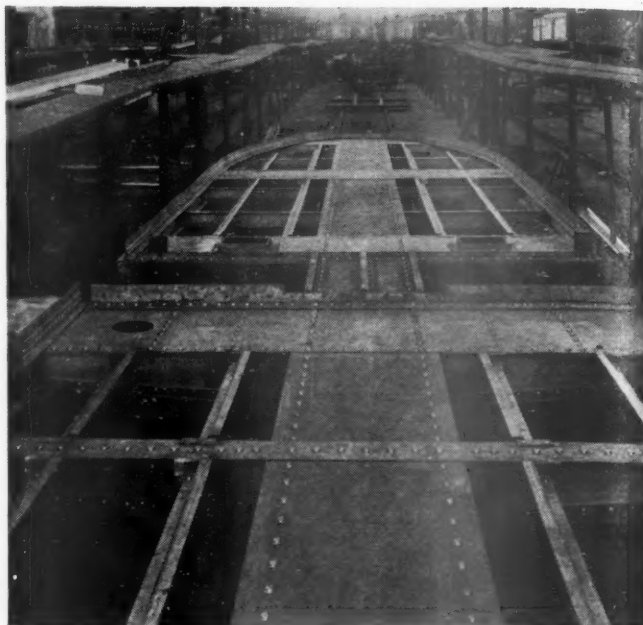
The side structure of the cars is unique not only in design, but also in the methods by which it was fabricated. The side posts consist of channel and angle pressings, the angles forming flanges on the open side of the channels by which the posts are secured to the side sheets. The posts, which, with some exceptions, are 6-11⅛ in. wide over the webs, are built up by spot welding. Instead of attaching the posts to the underframe and applying the side sheathing to the completed frame structure, side-sheet sections, varying somewhat in width, the widest of which include three window openings, are assembled with the side posts and other frame members in jigs and welded. The completed sections are then applied to the car underframe and the posts are secured to the side sills and each section



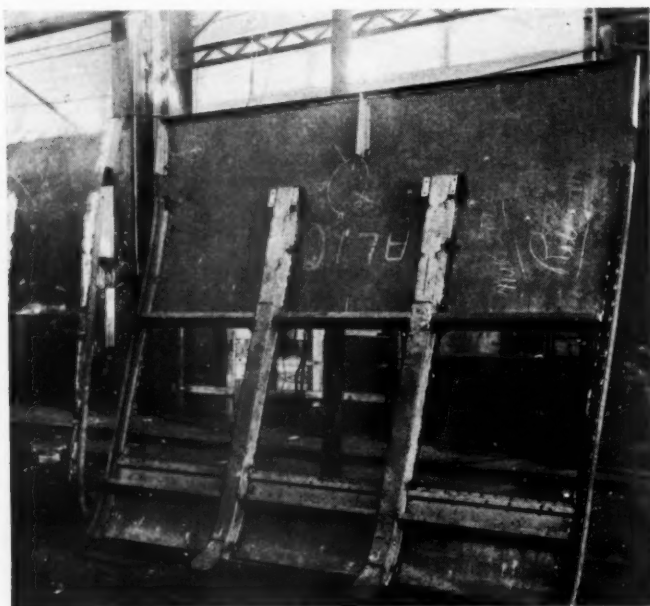
The Alco Type 660-Hp. Diesel Engine with Welded Cylinder Block and Base

joined by the one previously applied adjacent to it. A typical side section ready for application on the car is shown in one of the illustrations. It includes the $\frac{3}{32}$ -in. sheet, two side posts, a belt-rail stiffener of formed Z-section and a top window stiffener of special Z-section with a channel recess formed in the long lower leg which extends down to the top of the window opening. These horizontal members, as well as the posts, are secured to the sheets by spot welding and the exteriors of the sheets are thus completely free from rivet heads. The horizontal members are also welded to the posts.

To each vertical edge of a side-sheet section is spot welded a $1\frac{1}{2}$ -in. by 2-in. by $\frac{1}{8}$ -in. angle; that at one edge extends about $\frac{1}{2}$ in. beyond the edge of the sheet and that at the other edge is set back so that about $\frac{1}{2}$ in. of plate extends beyond the face of the angle. Each side-sheet joint is located in the center of a side post. The angle member of the side post is spot welded to the sheet in the jig, but the channel section of the post is omitted until the sheets have been joined, first by



The Sleeping-Car Underframe



A Side-Sheet Section Ready for Installation



Ready for the Inside Finish

riveting together the adjacent angle flanges and then by arc-welding the adjoining edges of the sheets on the outside. The channel portion of the post is then spot-welded in place between the two flange angles.

After the sides have been completely assembled on the car a belt rail of $\frac{3}{16}$ -in. plate, 3 in. wide, is placed in recesses provided in the backs of the posts and spot welded to the posts as well as to the inner flange of the Z-section belt-rail stiffener.

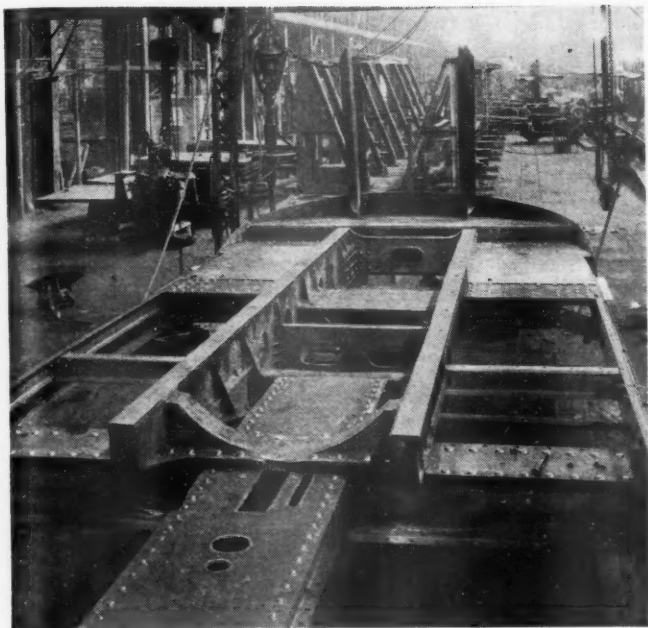
In the power car, where there are few window openings, the sheet sections are assembled in a single piece, extending continuously from the side plate to the bottom of the skirting below the underframe. In the passenger-carrying cars, where the windows are closely and regularly spaced, each sheet section is made up of top and bottom pieces joined by arc welding between the windows.

The bottom of the skirting is stiffened with a light angle spot welded in place and rigidity is further secured by gusset stiffeners which extend from the bottom of the sheet up to the side sill. In the power car, where required, the sheet panels are stiffened by light, shallow flanged channels running longitudinally, which are spot welded to the sheets.

As the illustrations indicate, the inward curve of the skirting begins above the side sill and the outside contour of the side posts are shaped accordingly. Similarly, the curve of the roof begins in the side of the car immediately above the tops of the windows. The side plate is a Z-pressing of $\frac{3}{16}$ -in. plate with the web placed horizontally and the lower and upper flanges conforming to the curve of the exterior and interior surfaces, respectively. Like the side sills, the plates are formed in several pieces which are joined by suitable splice members, riveted and welded in place.

The outside flanges of the posts are riveted directly to the lower flange of the side plate. The gusset plates extending up from the inside of the posts are also riveted to the inside flange of the plate and extend beyond the plate to be riveted directly to the carlines.

The carlines are channel pressings with the web vertical. The roof sheets are spot welded to the carlines and side plates and at the lower edge are welded to the side sheets to form an unbroken exterior surface from the bottom of the skirting on one side of the car over



Underframe of the Power Car

the top and down to the same point on the opposite side.

An exception to the methods of construction generally employed on the cars was made at the rear ends of the sleeper-observation cars. In order to provide smooth conformity to the long curves by which the sides of the car are carried around the rear end, the posts were attached to the underframe in the usual manner and the outside sheet, first hammered to shape on a wooden form, was welded on the frame members. After being thus tied into the car structure the rear door and the window openings were then cut from the sheet. The result is a smoothly curving surface free from waves.

The end construction consists of special corner posts, built up of $\frac{3}{16}$ -in. channel pressings and stiffened by several lighter formed sections, and 8-in., 17-lb. H-sections at the diaphragm posts. The bottoms of these posts are securely anchored to the buffer castings and body end sills and the tops are secured to a $\frac{1}{8}$ -in. horizontal anti-telescoping plate 15 in. wide with a $2\frac{1}{2}$ -in. flange which is riveted to the posts. The telescoping plate is stiffened by a 2-in. by $\frac{3}{16}$ -in. angle which is riveted to its inner edge. A continuation of the rear end sheet is used to form the door frame.

The passenger-carrying cars have Keystone floors which are supported on light Z-section longitudinal stringers which rest upon the transverse 5-in. channels pressed from $\frac{1}{8}$ -in. material. The transverse recesses in the steel floor are filled with cork and then covered with a $1\frac{3}{8}$ -in. Armstrong cork floor, cemented on. A surface of $\frac{1}{8}$ -in. Masonite is then cemented over the cork. The vestibules and steps are surfaced with Super-Diamond floor plates.

The ceilings and sides of the cars are insulated with light-weight Salamander, 2 in. of which is applied against the roof sheets, held by wires passing through the carlines, and 2 in. against the outside sheets, secured by cement and spot-welded nails. Cemented to the head lining is a 1-in. layer of the same material and to the inside finish a $\frac{1}{2}$ -in. layer. The same material is also applied in the side posts and the vestibule bulkheads.

The head lining, frieze and pier panels are of 14-gage aluminum alloy sheets. The wainscoting is $\frac{3}{16}$ -in. Presdwood.

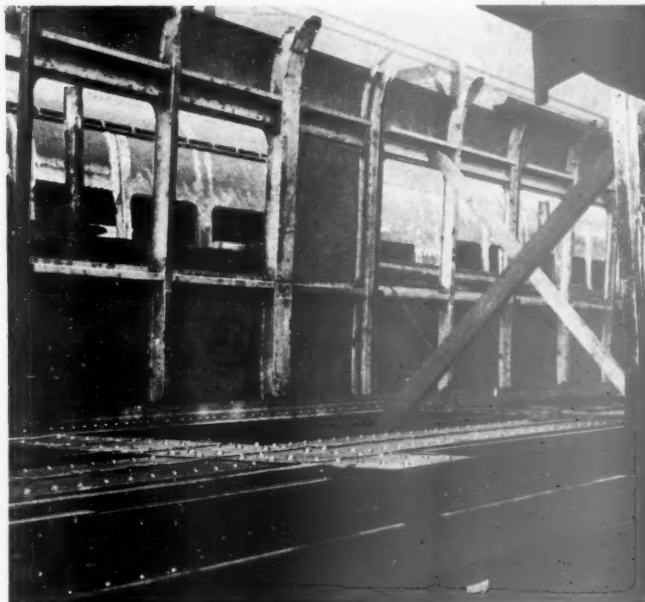
Between the purlines on either side of the car is

secured a $\frac{1}{16}$ -in. steel plate which forms the top of the center air-distribution duct. To these are attached formed steel members which complete the air duct and are shaped so that the outer edges form the shields for the source of the indirect lighting of the car.

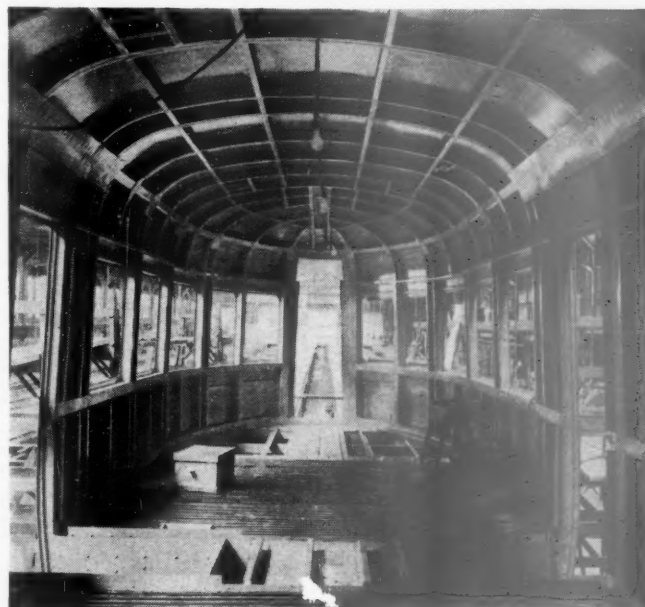
Vestibules and Diaphragms

The single entrance vestibule in each car is closed with side and trap doors of an unusual design. When closed, the bottom of the side doors extend down to the bottom of the skirting, thus producing the effect of an unbroken side surface. In order that they may swing back alongside the vestibule bulkhead when open, a section at the bottom of each door is hinged and is folded up inside the door before it opens. This permits the door to swing back into the step well above the second step.

The trap door, instead of opening from the side, is hinged directly to the inside of the side door and opens from the center. Links which connect the hinged sec-



Assembling the Side Sheets on the Car



Structure of the Observation Compartment

tion at the bottom of the side door with the under side of the trap door automatically fold up the former when the latter is lifted preparatory to opening the side door.

In each coach the bulkheads on one side of the vestibule have been set back about 11 in. from the trap door opening and lockers for lighting, air-conditioning and heat control apparatus have been installed in the vestibule space thus provided. These are accessible from the vestibule when the side and trap doors are closed. Corner space in the corridor of the sleeping car has been utilized for control lockers in the sleeper-observation car.

The diaphragms, developed by the car builder, which provide unbroken surfaces between the ends of adjoining cars, are supported at the bottom by the usual side buffer stems and at the top are alined by a pantagraph. The contact pressure between diaphragms is maintained by buffer springs at the bottom and by a semi-elliptic spring at the center of the top.

The outside contour of the outer face plate corresponds to the contour of the sides and roof. The space between this plate and the side and roof sheets is closed by a smooth canvas-backed rubber diaphragm, the back edge of which is kept to contour by attachment to an aluminum tube of stiff oval cross-section, alined and guided by two side stems at the bottom and one stem at the top. Tension is maintained on the diaphragm by cables attached to the aluminum tube which pass over sheaves to long coil springs which are disposed parallel to the end of the car. The side and roof sheets of the car extend 7 in. beyond the end sheet, thus concealing the back edge of the diaphragm and its supporting mechanism. The inner diaphragm enclosing the passage between cars is of the conventional folded type.

The Power Car

The construction of the power-car body is similar in general characteristics to that of the passenger-carrying cars. There are, however, a number of variations incidental to the special requirements of the power plant and motor truck. The channel-section center sills of the type already described are terminated at the cast-steel engine bed, into which they are securely tied. This casting also includes a portion of the bolster which is completed by supplementary arm castings and heavy top and bottom cover plates. The engine-bed casting terminates about 3 ft. back of the front buffer casting to which it is attached by two formed Z-section sills of $\frac{1}{2}$ -in. plate in line with the center sills. These front sills, the buffer casting and the engine bed are tied into a stiff horizontal platform conforming to the curved ends of the car which consists of two $\frac{1}{4}$ -in. horizontal plates

spaced 5 in. apart and securely tied together by structural shapes placed between them.

To provide clearance for the motor truck at the rear end of the car the channels which form the main portion of the center sills terminate forward of the rear bolster, to be replaced by a raised section built-up of Z-bars and cover plates which is securely attached to the top of the main center sills by deep angle adapter pressings. These pressings are lapped back over the tops of the main center sills to transfer the bending load, and the top cover plate of the main center sill is continued forward as the bottom cover plate of the raised rear section of the center sill.

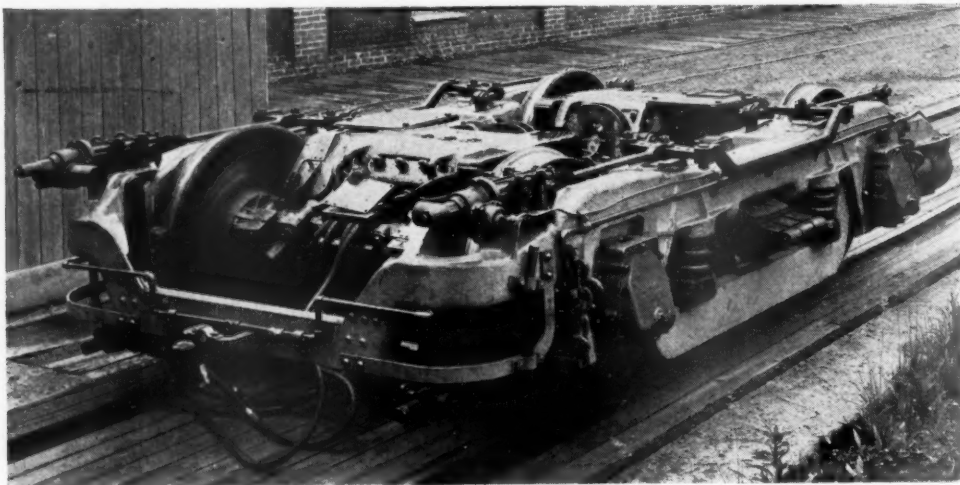
The front end structure consists of specially formed Z-section posts, the two at the front in line with the sills being 8 in. deep with 3-in. flanges. The rear flanges of these posts are straightened out where they pass through the $\frac{1}{2}$ -in. floor plate, are securely riveted to the buffer casting and are welded to the floor plate. A heavy anti-crash band of $\frac{3}{8}$ -in. plate, 16-in. wide, is wrapped around the front of the end frame at the junction of the end posts and buffer casting, the ends sloping down on either side and terminating at the junction with the front ends of the side sills.

The side and end plate at the front of the power car is of rolled angle section. The front hood and roof over the engine room is detachable and is secured to the body structure by bolting to the horizontal flange of this angle. To add stiffness at the top of the end structure the base of the hood assembly has a horizontal $\frac{1}{4}$ -in. plate, 36 in. deep, suitably stiffened by angles.

The roof over the engine room is provided with a center monitor 4 in. high, which is carried downward over the hood and front end of the car to the window-sill level. This roof is removable in two sections. The rear section contains the oil and water radiators, which are removable with it, and the exhaust stack outlet. This portion of the roof contains the louvres for the radiator air supply.

The forward removable section covers the engine and generator and contains the exhaust muffler which is enclosed in a roof-ventilated housing. Two hinged hatches in the monitor top provide for access to the top of the engine. There are also two hinged hatches in the roof at the right side of the monitor. The engine room floor, which is considerably higher than the floor in the rest of the car, is of $\frac{3}{16}$ -in. Super-Diamond plate.

The floor in the mail compartment is laid on 18-gage galvanized steel formed in pans and riveted to formed Z-section floor stringers. These pans are filled with $\frac{3}{4}$ -in. Salamander. A 1-in. yellow pine floor is laid cross-wise over the floor stringers. The finished floor is of



Power Truck with Motors Installed



Designed and Built for
Gulf, Mobile & Northern Railroad
by
American Car and Foundry Company



Designed by

Gulf, Mobile & Northern

American Car & Foundry Co.



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$\frac{3}{4}$ -in. tongue-and-groove yellow pine laid longitudinally over the lower course with building paper between.

The baggage car is floored with $1\frac{3}{4}$ -in. shiplap yellow pine laid crosswise on longitudinal stringers, except at the rear end over the raised portion of the sills where it is $\frac{1}{8}$ -in. Super-Diamond steel plate supported directly over the sills and on Z-section intermediate stringers. The ceiling of the baggage car is finished with $\frac{1}{16}$ -in. steel sheet screwed to the carlines. The sides are finished with corrugated steel.

The windows in the passenger-carrying cars are fitted with double pressed-aluminum fixed sash, the inner of which is removable to provide for cleaning, glazed with Pittsburgh plate glass. The outer sash has a $\frac{3}{16}$ -in. pane and the inner a $\frac{1}{4}$ -in. pane, the latter of shatter-proof glass. The single sash of the toilet rooms are fitted with Pressed Prism shatter-proof panes.

The windows in the power car are all closed with single sash which are fitted with $\frac{1}{4}$ -in. panes of shatter-proof glass. The window at the side of the operator's station at the front end of the car and that in the corresponding position on the opposite side are fitted with strap-operated drop sash. Air-operated window wipers are provided on the center and right front cab windows. The sliding doors in the mail and baggage compartments are provided with flush-closing guides.

The Trucks

The trucks are of the conventional equalizer type with cast-steel side frames and bolsters. The side-frame castings for the power car are of Lebanon Circle L2 alloy steel, heat treated. Those for the passenger-carrying cars are similar in design, but because of the lighter loads are carbon-steel castings.

The complete truck frames are built-up with separate transoms and end sills. Except in the case of the motor truck the transoms are built up of plates and angles riveted to horizontal arms cast integral with the side frames. The end frames are 6-in., 12-lb. ship channels.

The motor-truck transoms are alloy-steel castings similar to the side frames and are designed to include the spring nose suspension for the traction motors.

Both trucks under the power car are fitted with 36-in. rolled steel wheels mounted on 6-in. by 11-in. axles, fitted with Timken roller bearings, and have a wheel base of 8 ft. The motor truck, which weighs, complete including the motors, 30,400 lb., is mounted under the rear end of the car, while the idling truck, which weighs 16,300 lb., is mounted under the engine at the front end of the car, thus improving the equalization of the load at the rail under the two ends of this car.

The trucks under the passenger-carrying cars have a

wheel base of 7 ft. and are carried on $4\frac{1}{2}$ -in. by 8-in. axles having Timken roller-bearing journal boxes and 33-in. rolled-steel wheels. Each weighs 12,000 lb. Oilite discs are applied on the center plates of all trucks and Miner safety bolster locking center pins are used throughout. The trucks under the passenger-carrying cars are liberally supplied with insulation against the transmission of noise to the car interiors. Felt pads are applied under and around the sides of the center plates, under the side bearings and under the bolster end and side wearing plates. Molded rubber discs are placed at the top and bottom of the equalizer springs and felt pads are placed between the equalizer seats and the journal boxes. In the power-car trucks the only sound insulation are felt inserts placed between the ends of the equalizers and the journal boxes. All of the trucks are equipped with Simplex unit-cylinder clasp brakes.

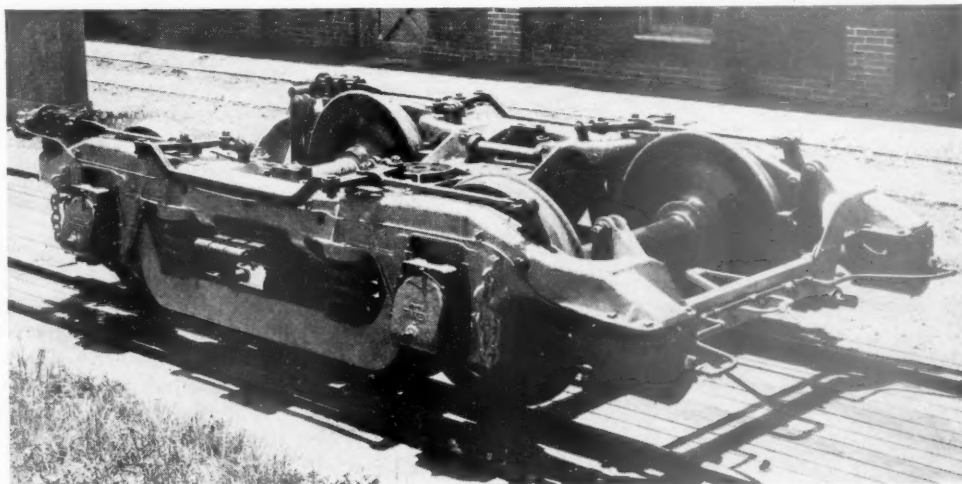
The Power Plant

The power plant consists of a 660-hp. Alco type McIntosh & Seymour Diesel engine, having six cylinders enblock, directly connected to a Westinghouse generator set. The engine operates on the four-cycle principle and has a normal sea-level rating of 660 hp. at 740 r.p.m. and an idling speed of 350 r.p.m. The cylinders are $12\frac{1}{2}$ in. bore by 13 in. stroke.

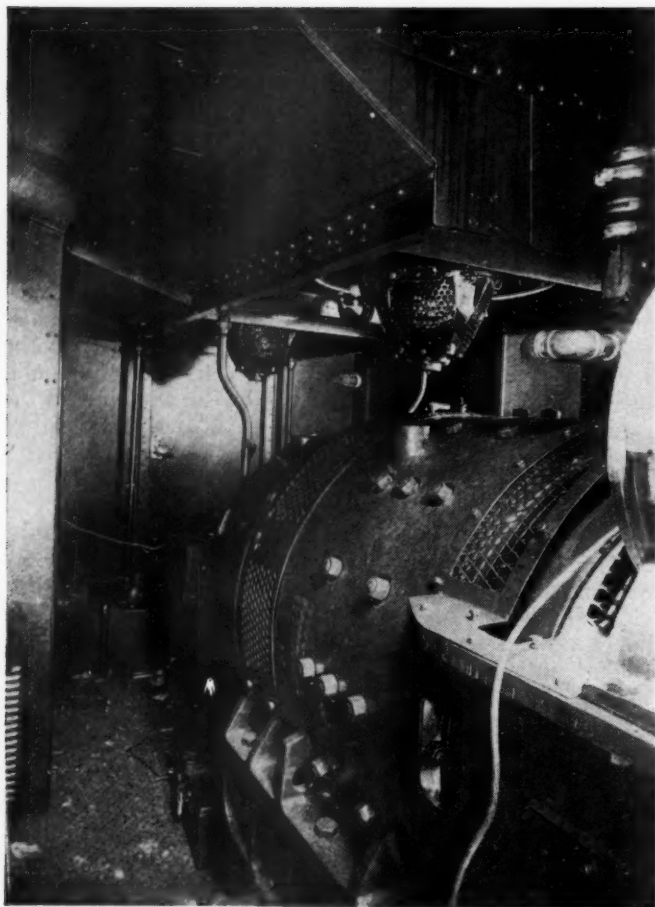
The cylinder block is in one piece made up entirely of welded rolled-steel sections. The cylinder base is also of one piece made of the same welded construction. The welding was done at the Dunkirk Works of the American Locomotive Company. An engine of this welded construction has been in locomotive service for more than two years and has given satisfactory service. The engine, including circulating pumps, weighs 24,500 lb., or 37.1 lb. per hp., a reduction of more than 20 lb. per hp. from the weight of the engines built for switching locomotive service with cast cylinder block and base.

Close-grained cast-iron cylinder liners are fitted in the cylinder block and, like the bearings, may be renewed periodically after an anticipated service of 5 to 10 years. The cylinder heads are separate castings of semi-steel, one for each cylinder and each head contains two intake and two exhaust valves, as well as the fuel-injection nozzle, all arranged symmetrically. The valve operating gear is entirely enclosed and pressure lubricated.

A heavy crank shaft is mounted in seven $9\frac{1}{2}$ in. by $5\frac{1}{2}$ in. main bearings in the engine base. The aluminum pistons are of the trunk type with cast-iron rings and the connecting rods, steel forgings. The engine base is extended to provide a base to which the generator frame is bolted. Access to the running parts in the base is provided by large detachable covers on both sides of the



The Leading Truck for the Power Car



The Rear of the Engine Room—The Engine-Cooling Fan Motors Are Overhead

engine. Fuel is pumped from the 600-gal. fuel-oil reservoir by a small motor-driven pump to the injection-pump unit mounted on the side of the engine. This injection pump unit contains six individual pumps, one for each cylinder.

A lubricating-oil reservoir is located in the engine base below the floor and all bearings and moving parts are lubricated under pressure by a power-driven oil pump located in the bottom of the base on the front end of the engine.

The Diesel engine drives three Westinghouse electrical generators. The generator assembly, which consists of the main generator, the auxiliary generator and the control generator, weighs 10,520 lb. The main generator, which is rated 450 kw. at 740 r.p.m., provides power for propelling the car and is also used for starting the engine. The auxiliary generator, the stator of which is overhung at the rear of the main generator, is rated at 60 kw. and develops power at 130 volts d.c. for the air compressor, radiator fans, air conditioning, generator excitation, lighting, cooking and battery charging throughout the train. The output of the control generator is used for operating the engine loading-control apparatus. A fan is mounted on the Diesel-engine fly-wheel which forces ventilating air through the generator assembly.

The auxiliary generator is compound-wound and is separately excited from the storage battery. The voltage output of this machine is held at 130 volts, under the varying auxiliary load conditions, by a vibrating-type voltage regulator, over a range of speeds from 350 to 740 r.p.m. The auxiliary power is distributed throughout the train by bus lines run in conduit under the car floors. The O-B Tight-Lock couplers have electrical

contacts for these bus lines and also for control and signal circuits.

Two Westinghouse 275-hp. traction motors are used to propel the train. They are of the self-ventilated series type and weigh 6,400 lb. each. They are mounted on the rear truck of the power car. The motors are suspended between the axle and the truck transom, one motor being used to drive each axle; the gear ratio is 22 to 54. The armature is carried on roller bearings and the axle bearings are of the sleeve type. They are connected to the generator either at series or parallel, at the will of the operator, by a small selector controller combined with the engine-starting controller. The motor is shunted at high train speeds by the same controller.

The engine-loading system used is the Westinghouse torque control, which is designed to absorb the full output of the engine over a wide range of train speeds. Any one of six engine-operating speeds may be selected by the master controller and maintained by the engine-governor operator. At each of these speeds, the circuit of the loading relay is automatically adjusted to control the main generator excitation so as to absorb all the engine horsepower available at this speed.

When the master controller is advanced from one engine speed to the next higher, the generator load is immediately reduced until the desired higher speed has been reached, at which time the generator load is increased to maintain the higher speed automatically.

The oil and water cooling radiators for the engine are ventilated by two 40-in. propellor fans, each driven by a Westinghouse 10-hp. 130-volt vertical motor. These motors are mounted above the generator assembly, and each fan is mounted directly on the upper end of the motor shaft. The air compressor for the brake supply is driven by a 35-hp. series motor.

Air Brakes

The trains are equipped with the New York Air Brake Company type HSC brake with Decelakron control of the braking ratio during emergency applications. This is an electro-pneumatic brake for use in high-speed service and is adaptable to multi-unit trains of any length. The brake valve is self lapping. It includes the "dead-man" safety feature and an interlocking relay automatically opens the traction-motor switches and idles the engine when an emergency brake application is made. Automatic sanding control is also provided in emergency. There are two brake pipes, one for straight air and one for automatic operation. Control of the brakes interchangeably with standard steam equipment is thus provided for.

The braking ratios specified are 169 per cent for the front truck of the power car, 197 per cent for the motor truck, 200 per cent for the trucks under all of the coaches, and 185 per cent for the front and 165 per cent for the rear trucks of the sleeper-observation car. All of the cars are equipped with Universal ratchet hand brakes with drop handles operating through the Peacock gear train. These brakes operate only on a single truck of each car.

Heating and Air Conditioning

The cars are heated by the Vapor system with steam supplied from a Peter Smith automatically oil-fired boiler with a capacity of 500 lb. per hour. No attempt has been made on these cars to provide for reclamation of the condensate and two 300-gal. water tanks in the front end of the baggage car provide feedwater for the boiler.

Each car is equipped with a new Vapor constant-pres-

sure regulator. This includes a pressure reducing function, in addition to the usual regulator, which reduces train-line pressure to a maximum of 30 lb. per sq. in. at the regulator. The latter is thus never called upon to handle a greater pressure differential than 30 lb. per sq. in.

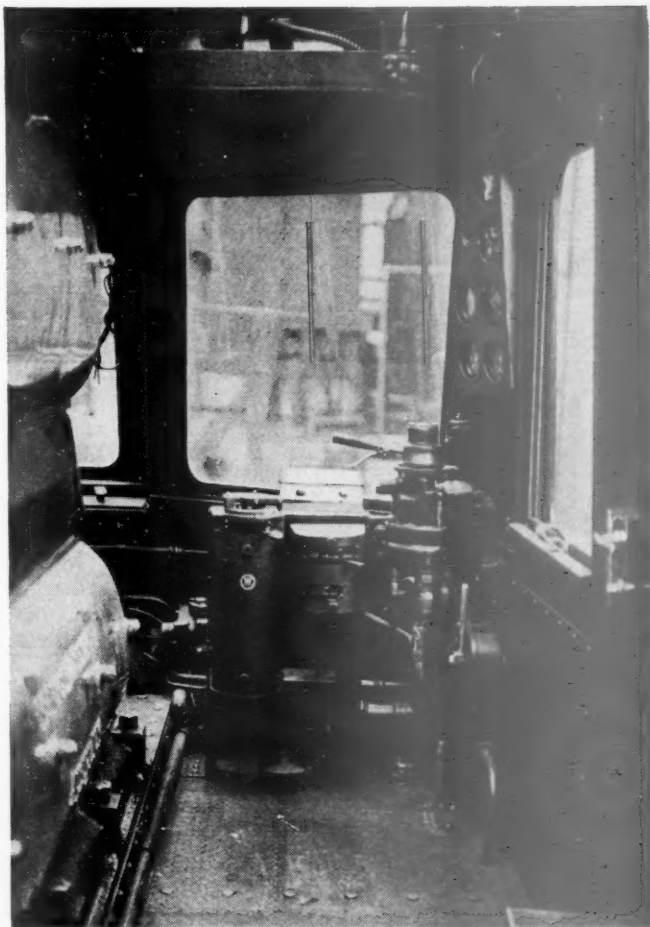
Heat is supplied to the passenger coaches from two sources—the fin heating coil in the air-conditioning unit and the fin-pipe radiators at the base of the side walls. The heat is controlled automatically through magnet valves which are electrically actuated through thermostats. The floor radiator consists of a single 1¼-in. fin pipe with a 1¼-in. standard return pipe along each side of each compartment. These pipes are enclosed in a rectangular duct which also serves as a support for the ends of the seats and through openings in the side of which the heat is admitted to the car body by air circulation.

The passenger-carrying cars are supplied with the A. C. F. system of air conditioning. This includes a motor-driven York six-ton Freon compressor, driven by a Century dual motor, and an A. C. F. fan-cooled condenser unit, both units being mounted under the car. The motor consists of a 7½-hp. 115-volt d.c. motor and a 10-hp. three-phase 220-volt a.c. motor. Normally the compressor is driven by the d.c. unit. At terminals, however, 220-volt power may be used to operate the 10-hp. motor. The d.c. motor then acts as a generator and provides power for charging the batteries.

Separate evaporator units are installed for each compartment in each car. In each of the coaches that which serves the compartments for white passengers is installed above the saloon passageway ceiling, while the one which serves the colored passenger compartment is placed above the vestibule ceiling. Each contains a double blower driven by a Century ⅓-hp. motor mounted between the evaporator and the beginning of the ceiling duct, with which the blower housings are directly connected. The fresh air is admitted through louvres near the bottom of the vestibule side doors and passes to the two evaporator units through grilles in the vestibule ceiling. Above those for the white passenger compartments are placed 2-in. metallic-wool filters.

The recirculated air in the white passenger compartment is admitted to the unit through a grille in the saloon passageway ceiling, while that from the colored passenger compartment passes through a grille in the vestibule bulkhead. The recirculating grille in the white passenger compartment carries a 1-in. filter of metallic wool.

In the air-conditioning equipment of the observation-sleeping car are a number of unique developments. The evaporator unit for the sleeping compartment is mounted at the end of the car over the passageway ceiling. The cooled or heated air from the unit is delivered to the sleeping compartment through the central ceiling duct and through grilles in the ceilings of the stateroom and the two dressing rooms. To insure thorough ventilation of the lower berths at night this portion of the car is equipped with two return air ducts placed one along each side of the fresh-air duct above the ceiling. These ducts, in each of which propeller-type fans driven by ⅓-hp. Arovent motors are mounted over the ceiling of the ladies' dressing room, are connected by branch ducts passing down through the permanent bulkheads between the berth sections, each of which opens into a section through a grille which is behind the headrest cushion when the berths are not made up. Another duct in each bulkhead leads from the bottom of the bulkhead just above the floor to a grille opening on the opposite side of the bulkhead from that connected with the suction duct. Thus, at night when the berths are made up,



Operator's Station, with the Seat Removed

air is steadily exhausted from each berth through the return-air ducts and fresh air supplied from near the floor through a grille at the opposite end of the section.

The return-air ducts are provided with slotted openings along the sides similar to those in the fresh-air ducts which tend to provide similar positive ventilation for the upper berths. Manually controlled dampers in the return-air ducts permit all return air to be wasted through grilles in the end of the car or to be recirculated through the evaporator units, or a part to be recirculated and a part wasted. Fresh air for the sleeping compartment is taken from underneath the car through a duct which occupies a corner in the ladies' dressing room. A recirculating grille in the passageway ceiling under the evaporator unit draws air from the corridor by the stateroom and ladies' dressing room.

Garland suction type ventilators are provided in the ceilings of the toilet rooms. Louvres in the doors to these rooms provide for a direct exhaust of smoke-laden air from the dressing rooms, thus keeping it from recirculating into the body of the car.

The evaporator unit for the observation compartment is mounted over the vestibule ceiling and receives its fresh air through a filter-protected grille in the ceiling. The fresh air is admitted and distributed in the observation compartment through a Hart & Cooley grille in the bulkhead at the rear of the luggage-rack passageway. The recirculated air returns to the evaporator unit through filter-protected grilles at the top of the luggage-racks.

Unusual care has been devoted to providing ready accessibility to the evaporator units and accessory equipment mounted over the ceilings. This is done through

the hinged grilles and through hinged panels in the ceilings, above which the motors and blowers are mounted on hinged plates which permit them to be dropped down through the ceiling openings where they can be readily worked upon without detachment and removal.

Lighting

A combination of direct and indirect lighting is used in the coaches. There is an indirect lighting duct on

the reading plane in each seat. Each unit contains a 25-watt lamp and is controlled by an individual toggle switch. The lighting units in the men's and women's rooms are recessed into the ceilings, and the lighted surface is a flat plane of diffusing glass flush with the ceiling.

The observation-lounge is lighted by a special oval semi-indirect lighting fixture, in the center of the ceiling, which contains seven 50-watt lamps. Additional

Materials and Special Equipment Used on the G. M. & N. Streamlined Trains

Builder	American Car and Foundry Company, New York
Diesel engines	McIntosh & Seymour Corp., Division of American Locomotive Company, Auburn, N. Y.
Cor-Ten steel	American Sheet & Tin Plate Co., Pittsburgh, Pa.
Aluminum	Carnegie Steel Co., Pittsburgh, Pa.
Stainless steel sheets	Aluminum Company of America, Pittsburgh, Pa.
Super-diamond stainless steel sheets, and truck-frame side castings (passenger-carrying cars)	Republic Steel Corporation, Youngstown, Ohio
Brass	Crucible Steel Co. of America, New York
Steel bed plate castings	Clendenin Bros., Inc., Baltimore, Md.
Malleable castings	General Steel Castings Corporation, Eddystone, Pa.
Truck-frame side castings (power car) and miscellaneous steel castings	Eastern Malleable Iron Co., Naugatuck, Conn.
Malleable iron castings	Lebanon Steel Foundry, Lebanon, Pa.
Peacock brakes	Meadville Malleable Iron Co., Meadville, Pa.
Hand brakes	National Brake Co., Buffalo, N. Y.
Clasp brakes	Universal Draft Gear Attachment Co., Chicago
Air-brake equipment	American Steel Foundries, Chicago
Brake shoes	New York Air Brake Company, New York
Truck springs	American Brake Shoe & Foundry Co., New York
Miscellaneous small springs	American Locomotive Co. (Railway Steel Spring Division), New York
Draft gears	Union Spring & Mfg. Co., New Kensington, Pa.
Wheels	Edgewater Steel Co., Pittsburgh, Pa.
Axles	Armco Railroad Sales Co., Middletown, Ohio
Coupler devices	Carnegie Steel Co., Pittsburgh, Pa.
Journal bearings	Ohio Brass Company, Mansfield, Ohio
Oilite bushings	Timken Roller Bearing Company, Canton, Ohio
Lubricants	Amplex Mfg. Co., Detroit, Mich.
Center pins	Texas Co., New York
Truck side bearings	Gulf Refining Co., Pittsburgh, Pa.
Salamander hair felt	W. H. Miner, Inc., Chicago
Presdwood	A. Stucki Co., Pittsburgh, Pa.
Generators, traction motors and electric control equipment	Johns Manville Co., New York
Miscellaneous electrical equipment	Masonite Corp., Chicago
Motors	Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.
Mufflers	Allen-Bradley Co., Milwaukee, Wis.
Cut-out	Century Electric Co., St. Louis, Mo.
Cable	Burgess Battery Co., Madison, Wis.
Batteries	Pennsylvania Electric Switch Co., Des Moines, Iowa
Electric material relays	John A. Roebing's Sons Co., Trenton, N. J.
Electric lamps	Electric Storage Battery Co., Philadelphia, Pa.
Bell ringer, King type	Crannall Nugent & Krantz Co., New York
Lighting fixtures for coaches	General Electric Co., Schenectady, N. Y.
Lighting fixtures for mail compartment	U. S. Metallic Packing Co., Philadelphia, Pa.
Headlights and charging receptacles	Luminator, Inc., Chicago
Back-up light	Safety Car Heating & Lighting Co., New York
Air-conditioning compressor	Pyle-National Company, Chicago
Freon refrigerant for air-conditioning	Electric Service Supplies Co., Philadelphia, Pa.
Ventilators	York Ice Machinery Corporation, York, Pa.
Grilles	Kinetic Chemicals, Inc., Wilmington, Del.
Heating equipment	Garland Ventilator Co., Chicago
Thermometers	Hart & Cooley Mfg. Co., Holland, Mich.
Radiators	Vapor Car Heating Co., Chicago
Door tracks and hangers	Taylor Instrument Co., Rochester, N. Y.
Diaphragms	Young Radiator Co., Racine, Wis.
Furnishings for observation room	Richards-Wilcox Mfg. Co., Aurora, Ill.
Window fixtures	Adams & Westlake Co., Chicago
Pantasote window curtains	John Wanamaker, New York
Window fixtures, miscellaneous hardware, toilet hoppers	National Lock Washer Co., Newark, N. J.
Plate glass	Pantasote Co., New York
Pressed prism glass	Dayton Manufacturing Co., Dayton, Ohio
Trap doors	Pittsburgh Plate Glass Co., Pittsburgh, Pa.
Floor plates, Super-diamond	Pressed Prism Plate Glass Co., Chicago
Seats, mail-room fixtures, sleeping-section equipment and air-conditioning equipment	O. M. Edwards Co., Syracuse, N. Y.
Seat upholstery for two buffet coaches	Alan Wood Co., Conshohocken, Pa.
Seat upholstery for "swing" coach	American Car and Foundry Co., New York
Seat upholstery for sleeping compartments	Massachusetts Mohair Plush Co., Boston, Mass.
Leather for coach seats	Sidney Blumenthal & Co., New York
Carpet	L. C. Chase & Co., Boston, Mass.
Drinking cups and Ajax cup dispensers	Blanchard Bros. & Lane, Newark, N. J.
Tanks	Chas. P. Cochran, Philadelphia, Pa.
Valves	Logan Drinking Cup Co. (Division of U. S. Envelope Co.), Worcester, Mass.
Lead pipe	American Car and Foundry Company, New York
Wrought iron pipe	Walworth Co., New York
Pipe fittings	Viloco Railway Equipment Co., Chicago
Drain cocks	National Lead Co., New York
Lacquer and paint	Reading Iron Co., Philadelphia, Pa.
Cork base, cement, paint	Crane Co., Chicago
Train control	Imperial Brass Mfg. Co., Chicago
	E. I. duPont de Nemours & Co., Wilmington, Del.
	Armstrong Cork & Insulation Co., Lancaster, Pa.
	General Railway Signal Co., Rochester, N. Y.

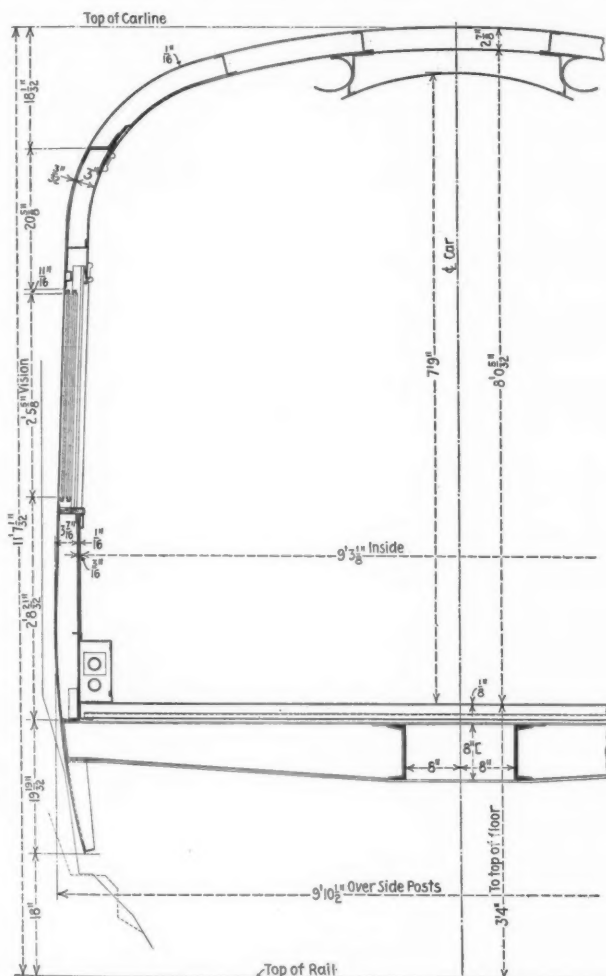
either side of the air-distribution duct containing 10-watt lamps spaced about 12 in. apart. This lighting is supplemented by Spotray lighting fixtures in each pier panel, immediately above the curtain-box molding and between the baggage racks. These units are mounted at an angle to project a cone of light downward and outward on

illumination is supplied by six pier-panel fixtures, each containing two 25-watt lamps, and by two table lamps, each of which is fitted with two 25-watt lamps.

The lighting for the sleeping compartment is furnished by three center ceiling fixtures, each containing five 15-watt lamps, and by individual 15-watt Spotray berth

fixtures. Flush type ceiling fixtures are used in the passageway and in the men's room. The mirror in the women's room is fitted with side bracket lights. Both flush ceiling units and Spotray fixtures are used in the stateroom. Deep bowl reflectors are employed in the vestibules. The baggage compartment is lighted by four 50-watt RLM enameled reflectors, and a 25-watt desk light. In the power compartment there are four 50-watt lights and a 50-watt engineman's light over the operator's seat. The instrument board is lighted indirectly by two lamps and each power-control locker is equipped with an inside light, operated from an automatic door switch.

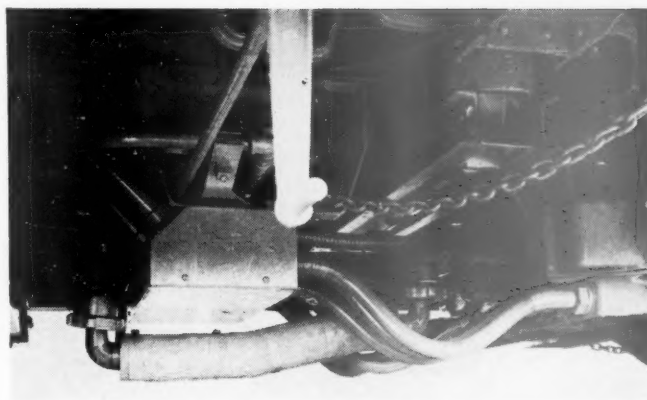
Two Pyle-National headlights are used. One is a 150-watt vertical-beam headlight and the other a 250-



Typical Section of One of the Coaches

watt horizontal-beam headlight. The 50-watt classification lamps are located immediately above the windows in the front end of the power car and arranged to indicate green or white. There is a Golden Glow back-up light at the rear end of the observation car. It is controlled from a back-up locker in the form of a small table at the rear of the observation lounge. This locker also contains a back-up valve and a conductor's signal button.

Exide Ironclad storage batteries are installed in the power cars, in the sleeping-observation cars and in the swing coach. The power-car battery is a type MVAHT, with 54 cells, and has a rated capacity of 262.5 amp. hr. It is used for lighting the power car and the buffet-coach when the engine is not running, and also for engine starting and power control. The batteries for the



Leads and Conduits Back of the Connector

other two cars are each 54-cell type KXK-9 of 75 amp. hr. capacity. All batteries are connected in multiple when the train is made up and are charged from the auxiliary generator. Connections are such that the air-conditioning compressor motors cannot be operated unless the auxiliary generator is in operation.

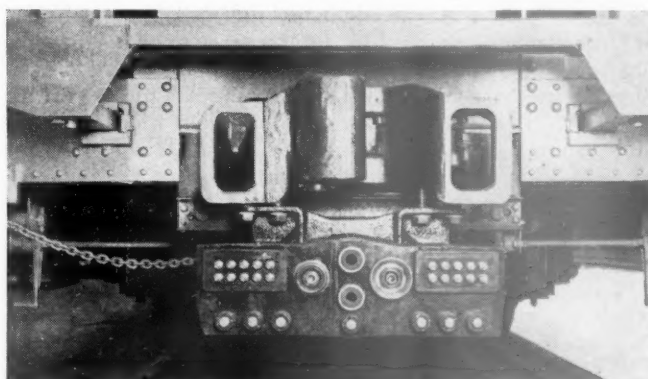
Couplers and Other Equipment

The cars of these trains are equipped with O-B Tight-Lock couplers with A. A. R. standard contours, which permit coupling with A. A. R. standard couplers. The coupler stems are arranged to house Edgewater ring-spring draft gears, which operate in an oil bath. The couplers are attached to the underframe through a ball-joint mounting which provides for the universal movement made necessary by the lack of movement between adjoining couplers due to the Tight-Lock feature.

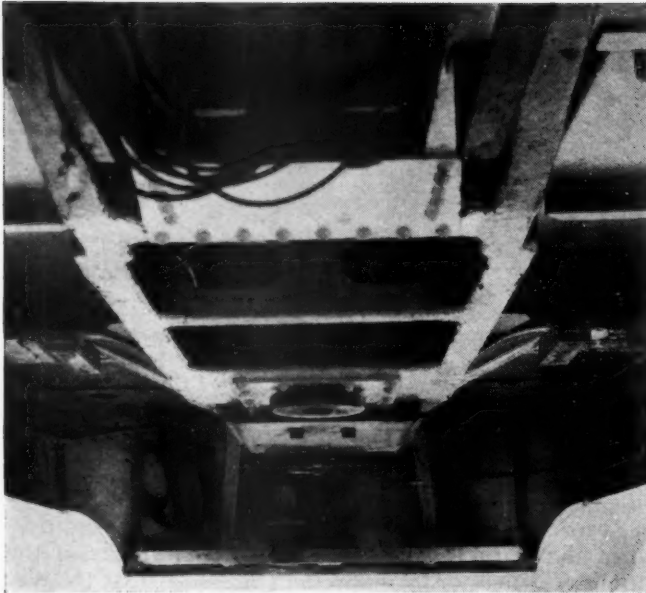
Each coupler carries a connector head which contains two side ports for the steam train line and a single central port each for the automatic and the straight-air brake pipes. The steam and air ports are both protected by automatic check valves. Flexible pipe connections with Vapor ball joints are provided for the connector steam ports. The air connections are armored hose.

Below the pipe connections are arranged electrical connector contacts for the auxiliary power and lighting train lines, as well as for the buzzer cab-signal and air-brake-operating circuits. Back of the couplers is a switch-box for controlling the electric brake circuits leading to the connector head. The switch, which is opened before cars are uncoupled, is controlled by a shaft which extends across the car with handles on either end which are readily accessible from the sides of the car. The movement of either of these handles also operates stop cocks in both brake pipes.

Arrangements are made for the mounting of portable



The O-B Tight-Lock Coupler and Connector



The Bell and Horn are Mounted Back of the Pilot

couplers at the front of the power car and the rear end of the observation-sleeper. Cut-out cocks and connections for air-brake hose are also provided at both of these locations.

The power car is equipped with Graham-White sanders delivering to the front wheels of both power-car trucks. A Pneuphonic horn and a locomotive type bell, with King type pneumatic ringer, are mounted below the engine-room floor directly behind the pilot. The trains are equipped with G. R. S. intermittent type automatic train control.

Railroads Oppose Train-Limit Bill

WASHINGTON, D. C.

HEARINGS before the sub-committee of the Senate committee on interstate commerce, headed by Senator Loneragan, of Connecticut, were continued this week on S. 27, the train-limit bill, introduced by Senator Brown, of New Hampshire.

Employees Will Suffer

J. Carter Fort, general solicitor of the Association of American Railroads, told the committee that enactment of the bill would not promote safety but greatly increase the hazards of train accident, by increasing the number of meeting points, would interfere with efficiency in operation as well as service to the public, and would directly increase by \$150,000,000 annually the operating expenses of the railroads at a time when they are least able to meet it. "If the railroads," said Mr. Fort, "are to be shackled by an arbitrary limitation of this character it is bound to be disastrous so far as the railroads are concerned, and railroad employees cannot help from suffering if the transportation industry does not thrive.

"This bill," he continued, "in practical effect would limit freight trains to 57 or 58 cars of average length and thus make it largely impossible for the railroads to take advantage of modern operating methods, which are essential to adequate and economical service to the public and which have become possible as a result of scientific development and the expenditure of a

vast amount of money for the improvement of roadway and equipment. Since the war capital expenditures totaling more than \$7,000,000,000 have been made by the railroads for improvements. Bridges and track structures have been strengthened, curves and grades reduced, and more powerful engines and stronger cars have been provided to bring about present-day operation, including the use of long trains. As a result there has been a striking increase in the speed of trains and an unparalleled improvement in the service to the public.

"The railroads are at this time confronted with the most severe competition. It is essential that their operating costs be kept at a minimum. If they are not to be shackled in the competitive struggle, they must be permitted to take advantage of the most advanced and economical operating methods. To prevent this by statutory fiat is unthinkable. In the end it would bring a hardship, not only to the holders of railroad securities but also to shippers and travelers and to the railroad employees. Unless the industry prospers and thrives it cannot offer additional opportunity for work. You could not do a greater disservice to the employees than to enact a measure of this character.

"The bill, if enacted, would require that the railroads of this country operate approximately 116,000,000 additional train miles per year, on the basis of 1934 traffic. This would involve a direct increase in operating expenses of \$150,000,000. The indirect costs cannot be calculated with certainty but it is certain that they would be staggering. The existing equipment and facilities are designed for the operation of long and heavy trains. If they could not be used for this purpose, it is obvious that waste and inefficiency would follow. Additional train units would ultimately require additional side tracks and yard facilities, and new locomotives of a different type from those now used in long train operation.

"The bill would not promote safety, but, on the contrary, would greatly add to the hazards of accidents. During the past ten years the length of trains has been constantly increased and during the same period the rate of accidents has been reduced in an extraordinary manner. Safety of railroad operation has become a by-word. An unnecessary increase in the train units would increase the accident rate. Its effect would be particularly adverse with respect to highway crossing accidents. The safety consideration alone is enough to condemn the bill."

Mr. Fort also made the point that the increased "productivity" of the employees, which they refer to so often, has come about through increased power and longer trains, and said that in 1916 the cost to the railroads for labor per 1,000 traffic units was \$3.15, while in 1934 it was \$4.70. Taking into consideration the adjusted wages of employees due to the restoration of the 10 per cent deduction, he said the cost for labor would be \$5.15. On the other hand, Mr. Fort said, for each \$100 of capital invested, in 1916 \$5.90 was earned, while in 1934 it was only \$1.25.

Service and Operating Handicaps

J. W. Smith, vice-president and general manager of the Boston & Maine and the Maine Central, also testified in opposition to the bill, particularly as to service and operating handicaps which such a bill would impose on the railroads if enacted into law.

Mr. Smith said the labor organizations have been urging such legislation for over 20 years but that until this year, when Nevada passed a train-limit law, Arizona had been the only one to adopt it while 30 states had rejected it. He pointed out that to break up the long trains into shorter ones would naturally cause increased delays to the freight in the second and later sections.

The bill has no merit from an operating or safety point, he said, and in the long run would cost the railroads hundreds of millions. Regarding the difficulty in transmitting signals which had been made so much of by the proponents of the bill, he said that the safety question was not involved. When a train is moving the only signal necessary is one for a stop and there can be no misunderstanding about it. If the train is stand-

(Continued on page 941)

Looking East Over the Completed Embankment for the Relocated Line



Employs Drastic Measures to Cure Slide Condition

Chesapeake & Ohio constructs rock-filled trench to carry relocated line across gumbo deposit on hillside

WITH serious slide conditions presenting the major obstacle to the relocation of about 2,000 ft. of double-track main line for the purpose of eliminating undesirable curvature, the Chesapeake & Ohio adopted drastic and unusual slide-control measures in effecting the line change. The relocation work, now completed, was carried out near Chillicothe, Ohio, where this company's line follows the north or east bank of the Scioto river. The line involved is a portion of the Chesapeake & Hocking which was built by the C. & O. in 1926-27, to effect a connection between its line at Gregg, Ohio, and the Hocking Valley, a subsidiary, at Valley Crossing, a distance of 63 miles.

Location of Trouble

The location of the line change is a natural pocket in the wooded hills that rise steeply from the north bank of the river near Chillicothe. This pocket is roughly about 1,500 ft. long, measured parallel with the river, and about 350 ft. wide at the center. When the line was originally located through this section it was projected across the pocket at a distance of about 250 ft. from the bank of the river, the intention being to carry the line between the adjacent sidehill cuts on an ordinary earth fill of an average height of about 10 ft. In the original alinement the track was located across the pocket on tangent except for a 20-min. curve, 400 ft. long, at the east end.

During the construction of the line in 1927, the building of the double-track embankment across the pocket was commenced at the west end and carried eastward, the work progressing with no sign of trouble until about 200 ft. of the embankment had been constructed. Then, without warning, a severe slide occurred, which involved the general subsidence of a considerable area in the pocket, the surface of the ground settling several feet in some places. At first it was felt that the slide was

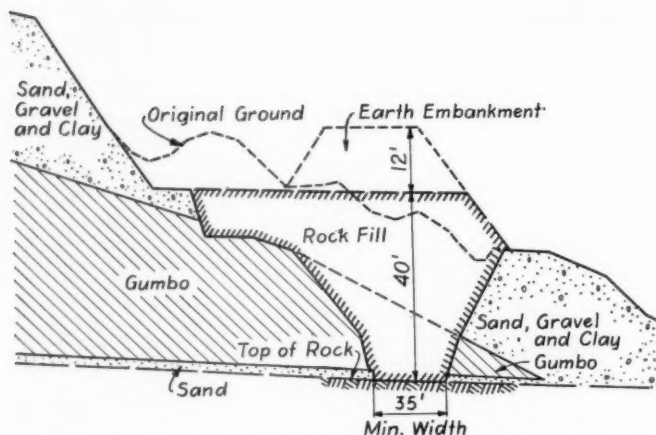
not of a serious nature and that its effects could be overcome by continuing the grading work until sufficient embankment had been placed to bring the line to grade. However, the ground continued to settle, the material at the toe of the slope being pushed out into the river to an alarming extent.

At this point it was decided that the provision of some form of lateral support along the river bank might prevent further settlement. Accordingly, the excavation of a trench was commenced preparatory to the construction of a concrete retaining wall. However, the sliding material interfered so seriously with the excavation work that the attempt to build the wall was abandoned.

The Line Relocated

With the failure of this measure, the railroad's engineering forces came to the conclusion that a permanent and satisfactory solution of the problem could not be attempted without a thorough investigation of the subsoil conditions in the slide area. Because of the time required, however, such a survey, if carried out at that time, would have delayed indefinitely the opening of the line. The only alternative, therefore, was to relocate the line in such a manner as to avoid the slide area.

Fortunately, the topography in the vicinity was such as to permit the relocation of the line around the pocket on the uphill side without undue delay or an excessive amount of grading. At best, however, the relocated line afforded only a temporary solution to the problem, as it involved, from west to east, a 5-deg. 42-min. curve to the left, 502 ft. long, a 7-deg. curve to the right, 1013 ft. long, and a 7-deg. curve to the left, 514 ft. long, with short sections of tangent track between the curves. With this alinement necessitating slow orders in both directions, the railroad undertook an exhaustive investigation of the subsoil conditions throughout the troublesome area with a view to de-



A Typical Cross-Section Through the Slide Area Showing the Shape of the Rock-Filled Trench

termining what measures could be taken to stabilize the area sufficiently to permit the construction of the line in the original location.

The investigation was made by core-drilling to bedrock, the borings being made in five parallel lines with from 3 to 10 holes in each line. The lines of holes were perpendicular to the line as originally located and averaged 150 ft. apart. Several additional holes were also drilled at intervals along the proposed alinement.

Subsoil Conditions

The borings revealed that bedrock, which was found at an average depth of about 40 ft. below the ground line along the center line of the proposed embankment, was overlaid by three strata of different materials. The upper stratum consisted of a mixture of sand, gravel and clay varying from 15 ft. to 35 ft. in depth. This material was underlaid by a stratum of gumbo which, in cross-section, was roughly wedge-like in shape with the point of the wedge lying at an average distance of 75 ft. downhill from the center line. The gumbo appeared to be in the nature of a localized deposit about 800 ft. in length, measured along the proposed alinement, and of an unknown width. Along the center-line of the proposed embankment the gumbo varied in thickness from about 5 ft. to 15 ft., being generally thickest near the center of the pocket and tapering in depth toward the edges. However, farther up the hillside it was found

to have a maximum depth of about 40 ft. Between the gumbo and the underlying bedrock was a thin layer of yellow sand 2 to 5 ft. thick. The bedrock, which was identified as Ohio shale, throughout most of the area dipped on a slight grade toward the river but at some points, particularly in the vicinity of the west end of the gumbo deposit where the sliding was most severe, the slope was more pronounced.

These data established the fact that the sliding was due largely to the gumbo which was found to have a very low bearing power, particularly when wet. It was also felt that there was some movement of the upper layer of material on the inclined surface of the gumbo. Because of the inability to predict the action of the gumbo under load it was concluded that drainage, no matter how effective, did not offer a solution to the problem. Rather, the remedy appeared to lie with some method of actively restraining the gumbo and other material from movement.

Plans Considered

In the course of its search for a satisfactory solution to the problem, the railroad investigated the merits of a variety of proposals, of which all but two were eliminated by superficial studies. The two measures that were given serious consideration were known as Schemes A and B. Scheme A provided for the construction of the line approximately in the original location, that is directly across the gumbo deposit, by supporting an earth embankment on a rock-filled trench extending to bedrock. The sides of the trench were to have 1 to 1 slopes and the width at the top was to be sufficient to allow the earth embankment to be carried on the level surface of the rock back-fill.

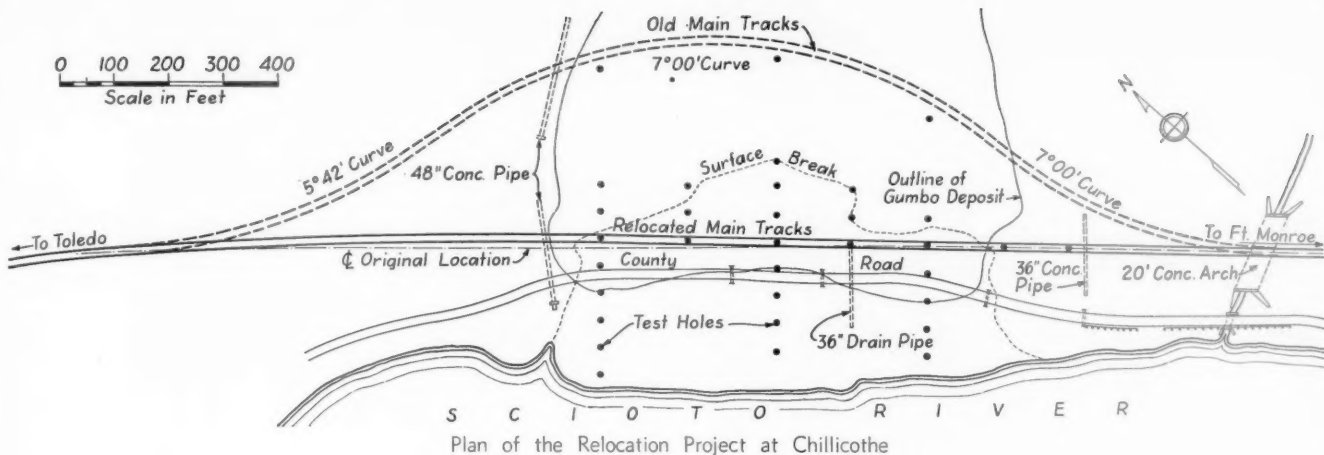
In Scheme B the unstable area was to be avoided entirely by routing the line around it on the uphill side. In this plan the extreme curves of the temporary location were to be supplanted by 2-deg. 30-min. curves, the use of which, however, would have necessitated the location of the line in such a manner that the excavation required would have been extremely heavy. It was largely for this reason that Scheme B was discarded in favor of Scheme A.

Other Proposals

Largely because of the unusual nature of the conditions which they were designed to correct, a brief de-



This View of the Slide Area from the East was Taken in 1927, When the Unstable Character of the Underlying Formation First Became Evident. Indications of the Movement That Has Already Occurred Are Given by the Inclination of Some of the Trees and by the Cracks in the Roadway



scription of several of the other measures that were rejected should also be of interest. In one of these plans the unstable material was to be restrained by two lines of steel sheet piling driven to bedrock along the toe of the embankment slope and core-filled with rock. The stability of this structure was to be enhanced by cable ties extending from the top of the wall to reinforced concrete pile clusters driven at intervals on the uphill side.

Two other plans also involved the use of steel sheet piling, in one of which it was proposed to drive a series of connected cells of interlocking steel sheet piling along the toe of the embankment, allowing the original material in the cells to remain undisturbed. In the other plan the proposal was to use a single line of steel sheet piling along the toe of the slope in conjunction with a rock-filled trench on the downhill side of the sheet piling.

Another scheme was predicated on the theory that the situation would be helped by a system of subsurface drainage designed principally to intercept the flow of water through and along the upper surface of the gumbo. In this plan it was proposed to install a longitudinal line of 48-in. perforated corrugated pipe along the top of the gumbo above the embankment, with 15-in. perforated corrugated laterals extending from the 48-in. pipe down through the gumbo to a 60-in. corrugated metal discharge line lying on the surface of the bedrock. Still another plan would have involved the outright removal of the gumbo in the affected area and the back-filling of the excavation with more suitable material.

Conduct of the Work

Scheme A involved the excavation of an 800-ft. trench having an average depth of about 40 ft., measured at the center line of the proposed embankment, and an average width at the bottom of about 40 ft. In carrying out the excavation work a 1¼-yd. gasoline-powered shovel, beginning at the east end, carried the excavation down as far as was conveniently possible with this type of equipment. This machine was followed by a gasoline-powered dragline, also with a 1¼-yd. bucket, which carried the excavation to bedrock.

As the excavation work progressed it was found that the pressure of the over-burden on the uphill side was causing the surface layer of sand, gravel and clay to slide down into the trench. To overcome this situation and to preclude future trouble from this source, all material on the uphill side down to a level with the top of the rock back-fill was removed to a distance of 30 ft. or more away from the toe of the proposed embankment slope.

All material from the excavation was hauled in motor

trucks to an 8.7-acre waste-bank along the river, which the railroad purchased for this purpose.

Rock for back-filling the trench was obtained from a borrow pit, 22 miles east of the site of the work, and was hauled in 30-yd. air-operated side-dump cars, 10 cars to the train and an average of 3 trains per day. At the pit the rock was loaded by a 3½-yd. steam shovel. Any size of rock that could be handled conveniently in this bucket was considered satisfactory for the back-fill. The rock was dumped from a construction track built around the trench in the uphill side, which was shifted toward the river as the back-filling progressed.

The trench is drained into the river by a 36-in. corrugated metal pipe, 130 ft. long, located at the lowest point along the bottom of the trench. This pipe is provided with a check valve to prevent the back-flow of water into the trench during flood stages of the river.

Quantities

In addition to permitting the removal of the slow orders, this project accomplished the elimination of 135 deg. of curvature and 200 ft. of line. It required 104,000 cu. yd. of trenching, 81,000 cu. yd. of rock back-fill and 25,000 cu. yd. of earth embankment. Work on the project was started on July 30, 1934, and was practically completed by the end of the year.

C. W. Johns, chief engineer of the Chesapeake & Ohio, exercised general supervision over the design and execution of the slide control measures, while C. A. Whipple, district engineer at Columbus, Ohio, was in direct charge of the project. C. E. Butler was resident engineer on the ground. The grading and drainage work was done under contract by the C. R. Cummins Company, Cleveland, Ohio, the track work being done by company forces.



A View of the Excavating Operations at the Trench, Showing the Construction Track from Which the Rock Back-Fill Was Dumped



A "Cork-Screw" of 360 Degrees

Western Railways Suffer Severe Losses from Floods

Burlington loses 41 miles of track in a distance of 216 miles along Republican river in Nebraska

FLOODS resulting from unusually heavy rains in Kansas, Colorado and Nebraska, which caused heavy damage to railway property in eastern Colorado, southern Nebraska and eastern Kansas, during the closing days of May, as reported in the *Railway Age* of June 8, continued their ravages as the flood moved eastward.

In addition to the destruction of 1½ miles of line on the two approaches to the Republican river crossing of the Omaha-Denver line of the Chicago, Rock Island & Pacific, which necessitates the construction of 2,500 ft. of pile trestle, the Rock Island suffered serious damage to its Kansas City-Denver line along the Republican river in the vicinity of Clay Center, Kan., with the result that this line will not be reopened for service until about June 17.

At the confluence of the Republican and the Smoky Hill rivers at Junction City, Kan., the high water in the former caused a washout that interrupted service on the Union Pacific's Kansas City-Denver line. Continuing down the Kansas river from this point, the flood carried away two 150-ft. truss spans of the Rock Island's bridge at Manhattan. Further downstream, water over-

flowed the main lines of the Union Pacific, the Rock Island and the Santa Fe, interrupting all service into Topeka except over branch lines from the north and south. Trouble from high water was experienced also at various points between Topeka and Kansas City. Below Kansas City the damage to the railroads was confined to minor difficulties, including trouble on the Rock Island at Creve Coeur, Mo., near St. Louis, where the tracks were covered with 18 in. of water on June 5, later causing some damages that interrupted service until June 10.

Burlington Hardest Hit

Of all the railroads whose lines were damaged, the heaviest sufferer was the Chicago, Burlington & Quincy, which lost the use of 216 miles of main line in the valley of the Republican river in southern Nebraska on May 31. While there was heavy loss of life and property throughout the entire course of this stream, it took its greatest toll along the Burlington between Haigler, Neb., and Superior, where, in addition to causing destruction of railroad property amounting to more than a million dollars, the flood destroyed crops and stock on hundreds of farms, washed away buildings in the towns along the way and took the lives of nearly 100 persons. From the standpoint of the railroad, the most serious aspect is the fact that the line affected forms a part of the route from Denver to Kansas City, Omaha and Chicago. Until this line is restored to use, Denver-Omaha-Chicago trains are being detoured via Sterling, Colo., and Alliance, Neb.

Throughout this 216 miles of the Burlington's line along the Republican river there are but few stretches that have not suffered such damage as to render the track impassable. Forty-one miles of track have been swept off the roadbed. Embankments have been washed away in some locations, while in others the track has been buried under as much as two feet of silt and debris. A singular phenomenon is that only three main-line bridges suffered structural damage, and in each of these this consisted of the displacement of the superstructures, rather than the undermining of the substructures. Esti-



The Main Track, at the Left, Was Lifted from the Right Over the Passing Track

mates based on a survey of the damage done and on the progress made in restoration to date indicate that the line cannot be opened for through service before June 25.

Breaks in the crossings of the Republican river also isolated two branch lines extending into the state of Kansas. On the branch from Orleans, Neb., to St. Francis, Kan., a pile trestle overflow bridge lost its deck and several bents, and nearly a mile of embankment across the river bottom was almost totally destroyed, while on the branch from Republican, Neb., to Oberlin, Kan., two 132-ft. through truss spans of a bridge across the Republican river were pushed off the substructure, and the track for a half-mile north of the bridge was seriously damaged. The St. Francis line also suffered considerable damage in the upland back from the river.

The Republican river, in its course across Nebraska, occupies a valley with a flood plain some two or three miles wide and is bordered on the north and south by hills that rise to an elevation of some 200 ft. above the floor of the valley. The Burlington's line lies entirely on the north side of the valley close to the toe of the hillside. It is on a water grade averaging about 10 ft. to the mile, and the stretches of 0.5 per cent maximum grade are short. West of Oxford much of the line is on tangent, the curvature is moderate and the grading throughout the entire valley is light. Long stretches of the line are elevated above the general ground surface only enough to insure local drainage or protection from side hill runoffs.

Located for most part at some distance from the river channel, the line has been secure from the effect of previous floods except at a few locations, and owing to the rapid runoff from the lateral streams it has been subjected to the usual washout experience of railways in like situations. However, in the 50 years since this line was built, no water troubles even remotely approaching the magnitude of the present disaster had been experienced.

The flood of May 31 came as the climax of a succession of heavy rains in eastern Colorado and southwestern Nebraska during the previous week. Two spans of the 12-panel concrete pile trestle over Frenchman creek at Culbertson were washed out on May 27, and had been replaced with timber. The discharge from other tributaries was heavy and the Republican river was overflowing its banks, when a cloudburst, or series of cloudbursts, at the headwaters of the south fork of the Republican river and its uppermost tributary, Arikaree creek, late on May 30, together with very heavy rains in the water sheds of the tributaries on the north, produced a sudden runoff of such volume as to create a veritable "wall of water" that inundated the flood plain to levels far exceeding any recorded experience. This flood crest reached the Burlington's line west of



An Example of What Happened to Many of the Signals

Haigler about 4 a. m. on May 31, where 6 spans of a 13-span reinforced concrete trestle over Arikaree creek were pushed off the piers. Moving eastward, this flood wave, estimated by eye witnesses as some ten feet in height, continued its course along the Burlington's line, reaching Superior 36 hours later.

Nature of the Damage

In the main, the track rather than the roadbed suffered, the degree of injury ranging from the washing out of the ballast alone to the complete removal of the track for distances of as much as 200 yards from the right-of-way. Much of the track washed from the roadbed was turned bottomside up with the characteristic "cork screws," and there were several cases of complete 360-degree "cork screws." Many washouts occurred, primarily at the ends of bridges, but most of these are short. The longest pile bridge to be driven on any one location will have a length of about 400 ft.

In general, the task confronting the Burlington in the restoration of the main line assumes large proportions and will entail a long delay in the resumption of service because of the great mileage of track that must be rebuilt or at best resurfaced, rather than by reason of the severity of the damage at any one point. Between Oxford and Superior, repair operations are being conducted with the aid of work trains and rail equipment from both ends, as well as from Red Cloud, an intermediate branch line junction point, but west of Oxford for a distance of 220 miles to Brush, Colo., there are no rail connections over which equipment may be moved in. Furthermore, the west end of this 220 miles was effectively cut off by the destruction of bridges west of



The Water Cut Holes in the Embankments at Many Places



Work Equipment Is Being Used Wherever Possible



At the Start Much of the Work Had to Be Done Manually

Brush, and by severe washouts on the line extending north to Sterling, Colo., and east of Brush on the main line. As a result, it was more than a week before a pile driver and construction material could be moved into Haigler from the west.

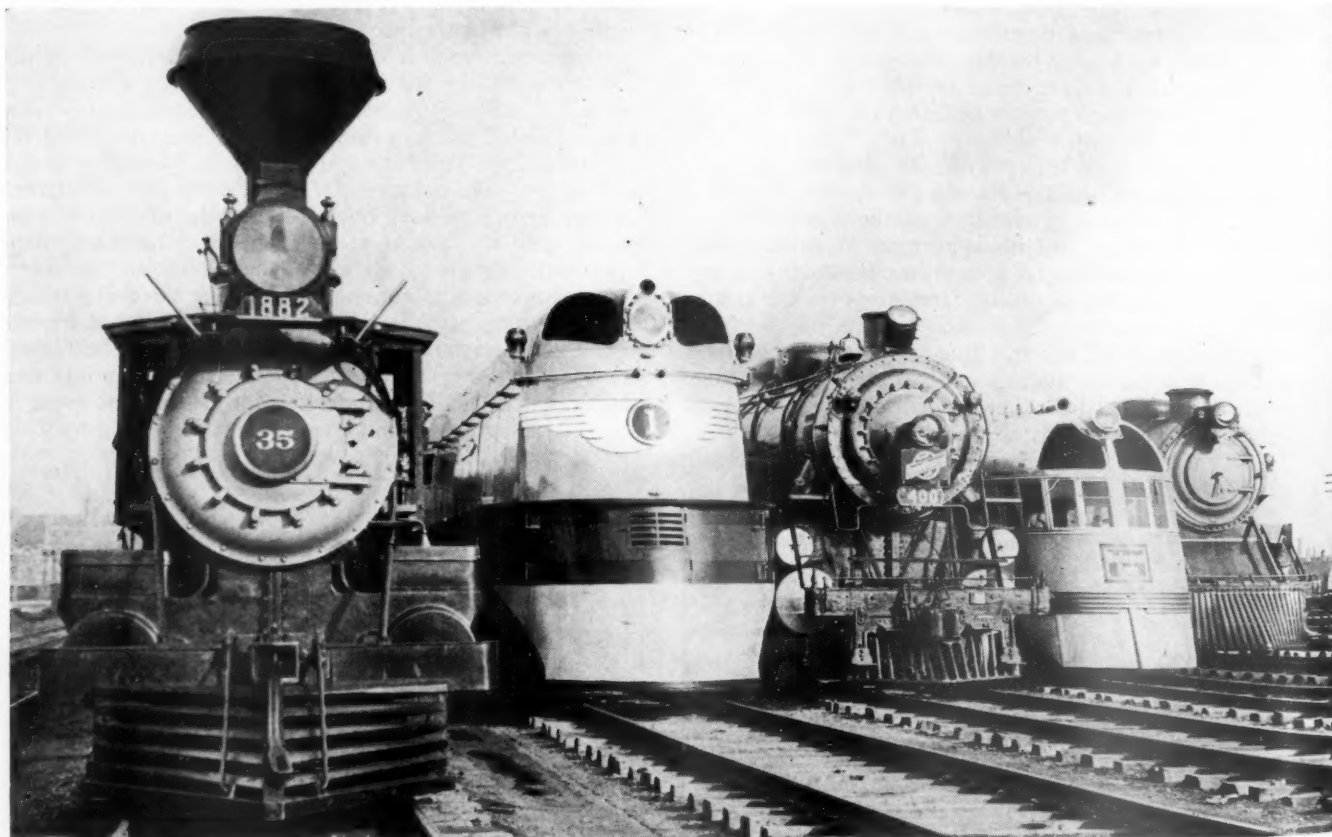
In the face of these conditions, initial efforts were concentrated on track work with the maximum force that could be used to advantage. Section forces were amplified, extra gangs were moved in from other parts of the line and additional gangs were organized. Every effort was made to procure off-track equipment locally, especially crawler-mounted drag-line machines, and these proved especially effective in restoring embankment and in dragging track back on the roadbed. Because all of the pile driving in the 100 miles between Cambridge and Haigler must be done by no more than two machines working from opposite ends, every effort is being made to reduce the amount of driving necessary, by constructing fills with drag-line machines, or by using them to build "shoo-flies" over which the driver may be moved

ahead in order that a following driver may be cut in to fill the gap.

Owing to the fact that so large a part of the damage consisted in displacement of the track, the primary demand on the stores department has been for tools, work equipment and work equipment supplies, camp outfits, etc. Heavy demands for bridge material were imposed on the stores department to close the breaks in the line west and north of Brush, Colo.; and piles and bridge timbers, as well as rail, ties, track fastenings and ballast, are being delivered to points of access on the Republican river line only when and as they are needed, to avoid congestion. While but relatively short stretches of the line were restored to service during the first week following the flood, the work of restoration is being prosecuted over such a large mileage that the advances on the several fronts have now been greatly accelerated.

Western Railroad Week Attracts Unusual Attention

FEW events in railroad history have attracted as much attention as "Western Railroad Week," staged by the western carriers from June 10 to June 15 to popularize railways and travel and call attention to the progress made by the western lines. Although started by the railways, other interests became enthusiastic until the spirit of Railroad Week permeated practically every field of endeavor. Governors and mayors in the West issued proclamations designating the period as "Railroad Week" and urging their fellow citizens to take part in local observance. Motion picture theatres sought



The Burlington Limited of 1882, the Hiawatha of the Milwaukee, the "400" of the North Western, the Zephyr of the Burlington and the Abraham Lincoln of the Alton Were Brought Together to Participate in a Motion Picture

railroad pictures for showing during the week, chambers of commerce and clubs engaged railroad men to speak at luncheons, parades involving members of the American Legion, Boy Scouts, railroad employees and townspeople, were staged in many places, radio programs called attention to Railroad Week, night clubs dedicated their programs to the railroads and thousands of persons visited railroad shops, roundhouses and other facilities to which they had been invited.

Typical of the activities prevailing in cities throughout the West was the program at Chicago. At 8 a.m.

W. T. Thiehoff, general manager of the Chicago, Burlington & Quincy, acted as master of ceremonies, while Roy B. White, president of the Western Union, opened the 7,000-mile circuit from New York, using the same brass key that was utilized by Marconi in opening the Century of Progress.

On June 12 a railroad station announcers' contest was staged from the platform of a street car at the corner of Madison and State streets, Chicago, the busiest corner in the world. Veteran train callers representing every western railroad running out of Chicago competed for



By Courtesy of the Chicago Daily Tribune

The Chicago Daily Tribune Published a Front Page Cartoon Entitled Railroad Week

On June 10, as in every western city, every locomotive whistle and bell was sounded, signaling the formal opening of Railroad Week. At noon on the same day, Harry G. Taylor, chairman of the Western Association of Railway Executives, delivered the keynote speech of the week before the Junior Association of Commerce, while at the same time, Robert Henry, assistant to the president of the Association of American Railroads, addressed the Advertising Men's Post of the American Legion.

At 1 p.m. a 7,000-mile "dot and dash pow-wow," starting from Chicago and extending through the principal cities of the West, was inaugurated with ceremonies at the Union station. Veteran telegraphers who have risen to high offices in the railroad organizations were stationed at ancient brass keys throughout the country to exchange messages over a single hook-up of telegraph lines.

the title and a loving cup presented to the winner. This feature was given a national hook-up over N.B.C.

Immediately following this contest, a hand car derby was staged on street car tracks. Six old-time hand cars being operated by picked hand car crews of the Illinois Central, the Chicago & North Western, the Chicago, Milwaukee, St. Paul & Pacific, the Chicago, Rock Island & Pacific, the Chicago, Burlington & Quincy and the Minneapolis, St. Paul & Sault Ste. Marie.

Following such gatherings as the Rotary Club meeting, the Kiwanis Club meeting, the City Club Round Table discussion, the Traffic Club of Chicago luncheon, the opening of the Chicago Historical Society special railroad exhibits, and special exhibits by railroads and other activities, the week's celebration was brought to a climax on June 15 by a parade sponsored by the western railroads and the American Legion.

Protective Section Meets at French Lick

THEFT of railroad property, trespassing and illegal train riders were discussed at the fifteenth annual meeting of the Protective section of the Association of American Railroads at French Lick, Ind., on June 6, E. de B. Panet, chief of the department of investigation of the Canadian Pacific, presiding. During the discussion of theft, figures were presented which showed that freight losses due to robberies increased from \$996,760 in 1933 to \$1,033,834 in 1934, an increase of six per cent. It was disclosed that the larger portion of the losses due to theft occurred among shipments originating and delivered at off-line points.

The Committee on Trespassing described the campaign of the Federal Emergency Relief Administration to curtail the movement of transients, and the part to be taken by railway police and special service departments. Under the plan, the railway police or special service departments will handle transients or illegal train riders or trespassers the same as in the past, taking them into custody and arraigning them before the proper authority. This plan is designed to eliminate possible claims for illegal detention which would undoubtedly follow if attempts were made to take such transients into custody and hold them in railroad yards or other places awaiting the arrival of a representative of the director of transient activities. Under the plan, all applicants for relief at transient camps will be fingerprinted and such fingerprints will be forwarded to the Bureau of Identification of the Department of Justice at Washington, D. C. Such procedure will prevent a percentage of undesirables from entering camp, will result in the identification and apprehension of a considerable number of persons wanted for various offenses in different parts of the country, will assist in reducing casualties to trespassers and will often result in identifying fatally injured trespassers.

The extent to which trespassing prevails is indicated by the casualty record. Thus, 2,731 trespassers were killed and 3,547 injured in 1933, while 2,425 were killed and 3,331 injured in 1932. Of the 6,278 trespassers killed and injured in 1933, 396 were under 14 years of age, 1,214 were from 14 to 21 years of age, 2,665 were "hoboes" and 2,778 were other adults.

The Committee of Direction called attention to the need for a standard telegraphic code which can be used by the heads of the police or special service departments of the railroads to insure more secrecy when exchanging information of a confidential nature. The committee is studying the matter and will probably suggest a code for this purpose in the near future.

Officers elected for the ensuing year were: Chairman, F. F. Phillips, superintendent of special service of the Atchison, Topeka & Santa Fe Coast Lines; first vice-chairman, W. E. Riggs, chief special agent of the Railway Express Agency; and second vice-chairman, W. J. Redmond, superintendent of property protection of the Erie.

Among the speakers at the meeting were W. M. Neal, vice-president of the Western lines of the Canadian Pacific; C. H. Dietrich, executive vice-president of the Freight Claim division of the Association of American Railroads; F. B. Mitchell, general manager of the Western lines of the Baltimore & Ohio; A. Feeney, director of the department of public safety of Indiana; Major General J. H. MacBrien, commissioner of the Royal

Canadian Mounted Police; L. G. Bentley, general safety agent of the Chesapeake & Ohio; Frank P. Baker, judge of the Marion County, Ind., criminal court; C. L. Jellinghaus, superintendent of property protection of the New York Central; H. A. Enochs, chief of personnel of the Pennsylvania; W. I. Spitzer, chief special agent of the Chicago, Indianapolis & Louisville; George Shea, director of investigation of the Canadian National; and A. L. Green, special representative of the Freight Claim division of the Association of American Railroads.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended June 1, which included a holiday, totaled 565,342 cars, a reduction of 34,201 cars as compared with the week before and of 14,314 cars as compared with the corresponding week of last year. This was an increase of 52,368 cars above the total for the corresponding week of 1933. Forest products and coke showed increases as compared with the week before, while coal and forest products showed increases as compared with last year. The summary, as compiled by the Car Service Division of the Association of American Railroads, follows:

Revenue Freight Car Loading			
For Week Ended Saturday, June 1			
Districts	1935	1934	1933
Eastern	129,918	129,535	114,078
Allegheny	114,145	116,192	94,714
Pocahontas	42,539	41,363	35,776
Southern	83,259	83,072	82,250
Northwestern	78,511	82,667	65,973
Central Western	73,071	81,177	74,155
Southwestern	43,899	45,650	46,028
Total Western Districts.....	195,481	209,494	186,156
Total All Roads	565,342	579,656	512,974
Commodities			
Grain and Grain Products.....	23,234	27,151	34,305
Live Stock	11,103	15,756	15,144
Coal	116,629	101,600	80,179
Coke	6,355	7,068	4,621
Forest Products	24,640	24,442	23,069
Ore	30,064	30,319	9,001
Merchandise L.C.L.	138,963	143,589	148,386
Miscellaneous	214,354	229,731	198,269
June 1	565,342	579,656	512,974
May 25	599,543	625,990	545,551
May 18	583,327	612,331	535,719
May 11	575,185	602,798	534,806
May 4	569,065	605,246	527,118
Cumulative Total, 22 Weeks.....	12,706,246	12,931,649	10,931,027

The freight car surplus for the first two weeks in May averaged 336,480 cars, an increase of 26,381 cars as compared with the average for the last part of April. The total included 184,965 box cars, 103,714 coal cars, 27,395 stock cars, and 8,797 refrigerator cars.

Car Loading in Canada

Car loadings in Canada for the week ended June 1 totaled 43,834, as compared with 44,614 last year and 41,065 cars for the previous week which contained a holiday, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
June 1, 1935.....	43,834	19,887
May 25, 1935.....	41,065	21,238
May 18, 1935.....	43,561	21,532
June 2, 1934.....	44,614	21,807
Cumulative Totals for Canada:		
June 1, 1935.....	935,411	495,522
June 2, 1934.....	916,318	516,133
June 3, 1933.....	744,169	381,484

Fourth Section Repeal Urged

Railroad traffic witnesses present elaborate case in support of Pettengill bill

WASHINGTON, D. C.

GROWING interference of the long-and-short-haul clause of the interstate commerce act with prompt readjustments of rail rates necessary to meet the competition of other carriers, was cited by railroad representatives from widely separated sections of the country who appeared during the past week at the House subcommittee hearings on the Pettengill bill, proposing repeal of the long-and-short-haul clause. Examples of typical instances in which application of the clause has resulted in increases in rates, not necessitated by other conditions, were also introduced, with cumulative showings as to the expense burden and prolonged delays in necessary rate adjustments involved in compliance with the act.

While there were frequent references to the effects of the long-and-short-haul regulation in the field of transcontinental traffic, testimony dealt in greater detail with the conditions it has developed in the interior of the country, rather than with the transcontinental features that traditionally have assumed a leading place in legislative discussions of the subject.

E. Morris, chairman of the Central Freight Association, presented testimony bearing on the adverse effects of the long-and-short-haul clause on the railroads in C.F.A. territory. He cited the situation with respect to pending readjustments of lumber rates, not sought by shippers nor desired by the railroads, necessary to rigid compliance with the fourth section as illustrating the burden the law imposes on railroads in conforming to its requirements. "Even under a simplified method of routing, which the carriers are now attempting to work out, it may require several years to put the plan in operation. There have been more than 25,000,000 figures set in up to this time in computing the distances involved in this adjustment, imposing a great burden and entailing a great expense on the carriers which is not justified except as required by existing law."

Mississippi Valley Rate Adjustment

F. H. Law, assistant vice-president of the Illinois Central, declared that in actual practice the long-and-short-haul regulations have resulted in higher rail rates in Louisiana, east of the Mississippi, Mississippi, Tennessee and Kentucky, than would have been required otherwise. Among other things he said:

The Mississippi Valley rate adjustment had developed with the construction of railroads. It was a competitive rate adjustment based on practical conditions. Mileage was considered, of course, but was subordinated to more important elements. The elements that were the foundation of the rate structure were what is known by railroads and industries using transportation as direct competition and market competition created by direct competition.

The fourth section as it has developed through the years has brought about a complete readjustment of the rate structure in the Mississippi Valley. It was really the first in the series of readjustments that have been made throughout the country to bring rates in conformity with the long-and-short-haul rule. The rate structure that succeeded the competitive adjustment is based almost altogether on consideration of mileage. It completely ignores both water competition and market competition and is generally known as a "dry land" basis of rates. This read-

justment was extremely hurtful to the railroads that served that territory as it resulted in a diversion of a large volume of their business to the waterways. In my opinion the readjustment has also been hurtful to Mississippi Valley territory as a whole. The only ones who benefitted at all from the change were those able to use water transportation, and this affected relatively few.

Ostensibly, the long-and-short-haul rule was intended to benefit intermediate points against those more distant that enjoyed lower rates. In actual practice, however, this has not occurred in the Mississippi Valley. Before the revision the points that enjoyed the lower railroad rates were ports on the waterways. Those that had the higher rates were the interior points, some of which were intermediate but not located on the waterways. The ports, however, continue to have lower rates than the interior points because they can ship and receive their freight by water and that is what they are now doing. But even the ports have not gained anything, considering the situation as a whole. This is easily understood because in the former competitive adjustment they had the benefits of both direct competition and market competition created by direct competition, but now they have only the water service which restricts their sources of supply and distribution. It is a fact that if the 'dry land' basis had not been substituted for the water-competitive basis, the railroads would have continued to make such rates as were needed to compete and would have continued to handle the traffic for which they had ample facilities, and the barge lines, which are now handling these products, many of which are owned by industries, would have been unnecessary.

The rate structure in effect prior to the revision was not arbitrarily established or maintained by the railroads. It was predicated on practical considerations. Furthermore, it was not an unregulated rate adjustment because it had been subject to the jurisdiction of the Interstate Commerce Commission for many years and there had been numerous investigations of it by the commission and many of the adjustments were specifically established under orders of the commission.

Through the years there has been a gradual tightening up of the long-and-short-haul requirements, until now the railroads must observe them rigidly, with only rare exceptions. There is practically no flexibility in their rate structure and the railroads are not able to meet the demands of business and on that account business has been compelled to seek water or other transportation to meet its needs. It is true the commission may in certain cases grant relief, but the exceptions that are permitted are not often helpful. It appears to me that the traffic management of the railroads most vitally and directly affected, with years of experience in their territory, should be the best judges of what is necessary to properly deal with the situation.

Losses Of Railroad Traffic To Competitors

Large losses of traffic by railroads to competing carriers by highway and waterway as a direct result of the handicaps imposed by the long-and-short-haul clause were also described.

R. G. Hodgkins, of the Atlantic Coast Line, speaking for the lines serving territory contiguous to the South Atlantic Coast and Florida, stated that a survey made on the Atlantic Coast Line to determine the extent of its loss of tonnage to competing carriers by water and truck indicated that it amounted to revenues of \$10,500,000 a year for that railroad on the basis of 1933 traffic. He estimated that since the 1930-31 season, and through the present season, tonnage of citrus fruit alone has been diverted to the unregulated carriers by waterway and highway from the Florida railroads carry-

ing freight revenues of \$30,000,000. Continuing he said:

It is an unquestioned fact that since the all-rail rates have been revised in compliance with long-and-short-haul requirements there has been a constantly increasing diversion of Western business to the other routes. In recent years the fourth section has been administered by the commission in such a manner that it has been practically impossible for us to obtain relief necessary to effectively meet water competition, and such limited relief as has been granted has, as a rule, been obtained after many months of delay, and in some instances after the competitors of the railroads had become so entrenched in the business that even after the rail rates were reduced the railroads have had little success in regaining any substantial amount of the traffic. Mr. Hodgkins cited an important instance in which the Florida lines began an effort in September, 1929, to secure fourth section relief necessary to meet competition, finally securing limited relief that did not become effective until December, 1934, or more than five years after the matter was first taken up.

It is the position of our lines that the southern carriers should be permitted to make rates necessary to meet competition without being required to observe them as maximum rates from and to intermediate points if the same character and degree of competition do not exist at such intermediates. Railroads should not be obliged to wait indefinitely before they are permitted to meet competition with other transportation agencies, but should have opportunity to meet it immediately. Railroads should not be hampered by complicated and impractical limitations such as are customarily imposed by the commission's fourth section orders. The railroads should be left free to decide for themselves whether or not it will pay them to compete.

Transcontinental Rates

Paul P. Hastings, general freight agent of the Santa Fe at San Francisco, presented like testimony as to conditions on the Pacific Coast, and as to transcontinental traffic. "Often shipments from an interior point in the east to an interior point in the west, or vice versa, do not use the rails at all but move by truck or inland waterways at both ends and through the canal in the middle. The railroads, deprived of their long haul by the canal, are now losing the shorter hauls," Mr. Hastings said.

In all the discussions of this subject which have taken place in the last 20 years or more, I have been struck with what seems to be an "unholy alliance" between some of the people in the intermountain territory and the intercoastal steamship lines to prevent the transcontinental railroads from competing with the steamships for traffic on the Pacific Coast. Whatever disadvantage accrues to the intermountain territory by reason of lower rates at the Pacific Coast terminals than in the interior has accrued from operation of the steamships through the canal and not from any action of the transcontinental railroads.

The transcontinental railroads have not been unmindful of the fact that their interest lies in the development of the interior in the Intermountain states, as well as the interior in the Central and Middle Western states, and the accusation, sometimes made, that these railroads have attempted to foster Pacific Coast states and have discriminated against the interior, is an accusation that the railroads have acted against their own interests. Whatever traffic is developed on the Pacific Coast must be divided at least with the water lines. Whatever is developed in the interior will remain largely with the railroads.

A community prospers on what it produces rather than on what it consumes. The railroads opened up this interior country to the settler and provided a means of transporting his products to market. They made low rates, both passenger and freight, to induce settlers to move into the interior western states and take with them their household goods and implements. They have made from the interior western states, including the intermountain states, low rates on agricultural products to the consuming markets of the Middle Western and Eastern states to enable the producers to market these products at a profit. The rates on many of the agricultural products from the interior or intermountain states are less to eastern markets than those from the Pacific Coast.

The charge, often made, that lower rail rates to the Pacific Coast than to intermediate points in the intermountain territory

would destroy business in the latter, does not seem to me well founded. I have tried to show that whatever advantages accrue to the Pacific Coast cities in manufacturing or merchandising are the result of water transportation and low rates made by the canal lines on raw materials for manufacture, or manufactured goods for re-sale. This advantage would remain with the Pacific Coast cities whether the railroads are allowed to compete with the boats on the coast and charge higher rates to the interior than to the coast, or must continue as they have for the past fifteen years to forego much of the business to the coast with the same rates to both coast and interior. So long as the canal remains open and the boats ply the oceans, a part of these eastern materials and products will reach the Pacific Coast by boat. The effects of this water transportation may be and are, to some degree, extended to the interior by backhauls from the Coast, but it is obvious that to the interior the transportation charges via the canal must always be substantially higher than to the ports.

On the other hand, the interior or intermountain country would profit more than the Pacific Coast from the passage of this bill. The Pacific Coast cities could do without the transcontinental rail service, except to haul perishable freight eastbound, but the interior must have it, both to obtain its supplies and to market its products. Anything that will help the railroads toward prosperity will help the intermountain country. More tonnage over the railroads means more men employed, more goods purchased and more taxes paid in the interior; it means a better railroad service, and it means that the haul of freight to and from the Pacific Coast would add to railroad earnings and decrease the proportion of railroad revenue that otherwise would have to be made up from freight charges on goods transported to and products hauled from the interior communities.

It has been stated that to permit the rail lines to compete with water lines would destroy water competition. Competition is not destruction in transportation any more than it is in commercial enterprise. Fair competition in transportation is only an equality of opportunity to secure traffic. The transcontinental railroads should be allowed to compete with the intercoastal steamship lines for transcontinental freight traffic. The railroads, over a period of at least two generations, slowly developed this traffic. Their transcontinental tonnage at the present time (except perishable products), notwithstanding the tremendous growth in population and industry on the Pacific Coast, is less than it was 10 years ago. The canal lines would have a substantial tonnage if they participated only in the development that has taken place since their own advent in the field.

H. C. Hallmark, freight traffic manager of the Southern Pacific, declared that repeal of the long-and-short-haul clause is necessary to "place the railroads in position to name rates from middle western industrial communities that will enable them to more effectively compete with eastern seaboard communities, and in turn to be better customers of far western interior communities, and also to enable the railroads to promptly and more effectively establish from these far western interior producing points rates on their products of farm, mine and manufacture under which they may move to the large consuming markets in the vicinity of tide-water."

T. L. Wilcox, assistant freight traffic manager of the Union Pacific, declared that the railroads probably would "have no quarrel with the situation as it is now if the policy of the commission in administering the law were based on the same sound principles that must, and do, control the railroad rate-maker, and also if the commission could act upon fourth section applications as promptly as the rate maker must act to meet in part the competitive situations. The rate-maker is in daily contact with the competitive situations which he must meet or retire from the field. His experience has taught him to take broad views of all such situations and make rates which while holding to the rail lines, or recovering traffic that is competitive with other forms of transportation will yield some additional revenue. This could not be done if in meeting the competition where he finds it he also makes rate reductions in territories which are free of that competitive situation. The latter would

more than overcome the former, and the result would be loss, not gain."

I. C. C. Has Other Power To Prevent Discriminations

Repeal of the long-and-short-haul clause would not remove from the law other sections clothing the commission with ample authority to protect other forms of transportation against destructive rate practices on the part of the railroads, according to railroad representatives. It was at the same time pointed out that the law now places the railroads under a great handicap in protecting themselves against the competitive rate practices of their waterway and highway rivals, and that the commission requirements necessary to administration of the law are responsible for a degree of inflexibility in rail rate making that is disadvantageous to both shipper and carrier interests. Testimony on these phases of the issue was presented by B. F. Parsons of Chicago, chairman of the Western Trunk Line Committee, A. B. Craig, general freight agent of the Central Railroad of New Jersey, W. C. Glynn, assistant freight traffic manager of the Pennsylvania, P. J. Tierney, general freight agent of the Chesapeake & Ohio, J. C. McGohan, assistant general freight agent of the Baltimore & Ohio, and H. F. Hallmark, freight traffic manager of the Southern Pacific. The representatives of the individual railroads confirmed as to special conditions on each of their lines statements as to general conditions affecting all railroads that had been developed in greater detail by Mr. Parsons, and other officers of standing or general rate committees that act for all lines. In discussing the powers that would remain in the commission after passage of the Pettengill bill, Mr. Parsons said:

Since the long-and-short haul clause was written in the interstate commerce act in 1887, the powers and duties of the commission have been greatly enlarged. Two extremely important features have come into the law. These are the power of suspension and the power to prescribe minimum rates. The wide publicity that is given to proposed changes in rates and the wide distribution that must be made of a tariff at the time of its publication afford everyone interested opportunity to know of any contemplated change in advance of its taking effect, and afford plenty of opportunity for protest to the commission, and for suspension, if there is any reasonable expectation that the new rate may adversely affect anyone's interest. The commission after suspending a rate conducts a public investigation where everyone has an opportunity to appear and be heard. The commission, if it deems it necessary, in order to prevent some violation of the law, can fix the minimum rate that a railroad may charge for any particular service. It can determine the reasonable rate, and it can determine what rates will be free from prejudice, discrimination, preference or advantage that may be unjust or undue.

With all of these safeguards surrounding the public interest, it seems wholly unnecessary to hamper commerce, and to restrict the opportunities of the railroads to most fully and effectively serve the public interest, by continuing in the law a rigid and arbitrary rule such as the long-and-short haul clause. If a railroad publishes to a competitive point a rate on any particular commodity lower than at the same time it charges to an intermediate and less distant point, the commission has full power and authority, either before the rate takes effect or afterward, to determine whether that rate causes discrimination or prejudice or gives to anyone or any description of traffic any undue advantage, and to determine both the reasonableness of the rate and what, if any relationship ought to exist between the rates to the more distant and to the intermediate points.

Mr. Hallmark presented statistical tables as to development of population and production in the intermountain area, the region where the long-and-short-haul policy has heretofore found its greatest support, indicating that present fourth section policies have not proven of advantage to that section, and he stated positively that a survey he had made showed that the position of jobbers

in the intermountain territory had not been improved by rigid application of the long-and-short-haul principle on westbound traffic, adding: "they are generally doing less business than twenty years ago."

Chairman Pettengill spoke of a letter he had just received from the operator of an iron casting plant at Salt Lake City complaining that because of the inability to secure fourth section relief on rates to Pacific ports, which the railroads were willing to establish, he had been shut out of markets on the Pacific coast by the competition of operators of like plants at Birmingham and other more distant points to whom water transportation is available.

Mr. Hallmark cited the fact that intra-coastal steamships along the Western Coast and the railroads paralleling the Pacific coast from California to Washington, existed side by side for many years without either being destroyed before the long-and-short-haul law was enacted, but that since 1910 the steamship lines had been given so nearly a monopoly in this field that they are now handling more than 91 per cent of the traffic that may move by either route under natural conditions.

Mr. Hallmark also commented on the opposition of the unregulated steamship lines to change in the fourth section, charging them with misrepresentation of the facts in a circular issued by the intra-coastal steamship lines which he read into the record. He then continued as follows:

Any suggestion or contention that the enactment of the Pettengill bill would enable the railroads to engage in improper practices or establish unduly low rates for the purpose of eliminating water or truck transportation, or would enable railroads to establish and charge any person or locality unjust or unreasonable rates or rates which will be unjustly discriminatory or unduly prejudicial or disadvantageous to any person or locality is erroneous and without foundation. Prior to such rates becoming effective the commission is empowered on its own motion or upon protest of any party to suspend or prevent such rates from becoming effective, and to enter upon an investigation of their lawfulness. If under the existing provisions of the law such rates "are found to be in any respect unlawful or in violation of any provision of the interstate commerce act, the commission is empowered to order their cancellation. With the enactment of the Pettengill bill railroads cannot establish rates lower than necessary to fairly compete with other forms of transportation while maintaining higher rates at intermediate points, for to do so would constitute a violation of the provisions of Section 3 of the act. The amendment of the interstate commerce act by the transportation act of 1920 conferred upon the Interstate Commerce Commission the power to prescribe minimum all-rail rates. It of course has the power to prescribe maximum rates. Any discussion of ancient history as to what may or may not have occurred prior to the time when the commission was authorized to prescribe rates has absolutely no application to present conditions. The commission then had no power to prescribe rates of any description, either maximum or minimum or absolute.

Manufacturing Interests in Central States Affected

Shipping interests located at St. Louis, Kansas City, and Chicago, and large manufacturing interests in the central states are being denied access to markets in the Southwest under the administration of the long-and-short-haul regulations, as a result of transportation competition through Gulf Ports, according to D. R. Lincoln, freight traffic manager of the Missouri Pacific Lines, who spoke for the Southwestern railroads.

Other forms of transportation have in the aggregate taken heavy toll from the traffic heretofore handled almost exclusively by the railroads, he said. They pick and choose the class of business which they will handle and the points between which they will operate, without any regard for the balance of the traffic or the intermediate territory. Southwestern railroads urge passage of the Pettengill bill because it will allow them

to so adjust their rates that industry, both manufacturing and agricultural, located in the interior may compete in territory now served almost exclusively from producing points much farther distant but served by water carriers. In its decision in 1927 in the consolidated southwestern rate cases the Interstate Commerce Commission refused to permit lower rates to points on and adjacent to the Gulf than to intermediate points. Since then all-rail rates to that territory on such important commodities as iron and steel articles, newsprint paper, and other commodities manufactured in the interior have been increased to levels so far above all water-competitive rates as to prevent their movement from the interior via all rail routes.

H. Wilson, vice-chairman of the Eastern Trunk Line Association, told the committee of the difficulties railroads in that territory encounter in adjusting their rates under fourth section requirements to meet changing conditions in their competition with the Great Lakes and New York State Canal lines, and in combination of the latter with trucks. He stated that the losses of traffic on this account are very large and continuing. He illustrated the delays incident to securing fourth section relief to meet such conditions by citing an instance in which the rail lines applied for relief in October, 1933, to protect against loss of sugar traffic to competing carriers. The relief was finally granted by the commission but it did not become effective until January, 1935, over 14 months after the application was filed. "During all this time the eastern rail carriers continued to lose the traffic to the water lines," Mr. Wilson said, "and were without any means of competing on any basis of equality for the prevention of further losses or for the recovery of the traffic they had already lost."

Mr. Wilson told the committee that 79 applications requiring fourth section relief by the commission before contemplated rate changes could be made effective were filed in 1934, and that on the applications on which hearings had been held and decisions rendered the average elapsed time from filing date to receipt of relief was 157 days.

He also cited the experience in his territory resulting from a recent decision in what is known as the eastern class rate case. This decision, he said, first fixed a basic rate for first class, and then made all other classes, of which there are 43, a certain percentage of the first class rate. "In that case," he continued, "the commission gave temporary authority to the carriers to charge, in certain cases, a lower class rate for a longer haul than the rate for an intermediate shorter haul. The commission then went further and denied all authority to maintain any of the existing commodity rates that were lower for longer than for shorter hauls. This made it immediately necessary for the carriers to immediately revise every one of the thousands of commodity rates that were in existence at the date of the eastern class rate decision by re-rating or placing each of such commodities in one of the 43 classes. This task has been and is a tremendous job, and the pity is that it is all occasioned solely and only because it is the only way by which the shippers and carriers can continue to enjoy what they have had and want retained. Both shippers and carriers are satisfied with the commodity rates involved in this re-rating."

Relocation Of Industries

Interference with rail distribution of the products of established industries in many interior sections of the country is causing the re-location of these industries, according to representatives of Southern and Middle Western lines. J. E. Tilford, chairman of the Southern Freight Association, and H. W. Beyers, traffic vice-president of the Chicago & North Western, dealt with this particular phase of the subject in detail. C. I. John-

son, assistant general freight agent of the New York Central Lines, presented a statement of the difficulties confronted by eastern lines in making rate adjustments in compliance with long-and-short-haul requirements and the delays encountered.

Mr. Beyers stated that with development of increasing rigidity in application of long-and-short-haul regulation the former heavy rail movement westbound to the Pacific coast of commodities manufactured in Mississippi Valley territory, and of manufactured commodities from Eastern territory to the Pacific Coast has been greatly diminished and in many instances has disappeared. "I have seen this business from the Central West transferred to competing carriers farther away but having access to water routes," he stated, continuing:

This situation has very seriously affected tonnage and employees of the Western Trunk Lines and their connections and it likewise has tended to retard the development of the Central West. I have also seen industries within this Central Western territory in many instances forced to ship their goods to the Atlantic Seaboard and thence by water to the Pacific Coast where heretofore that traffic moved all-rail westward from producing points. Likewise, industries in our territory receiving commodities from the Pacific Coast, have found it impossible to avail themselves of all rail routing and much of this tonnage reaches Lake Michigan ports via all water routes.

Mr. Tilford presented a series of maps showing the development of additional waterway and combination highway and waterway routes in Southern territory in recent years, in explanation of the increasing necessity from the standpoint of Southern railroads for flexibility in rate adjustments, free from present fourth section regulations, to meet new and changing competitive conditions. Continuing he said:

The situations that confront the rail carriers of the South are illustrated by simple examples. Because the railroads are unable to continue their competitive rates or establish new competitive rates to meet constantly changing conditions, shippers have encouraged water and truck competition where such transportation facilities are available, with hurtful results so far as concerns shippers dependent entirely on the railroads. Many commodities are manufactured in both eastern and western territories. Such commodities as plumbers' goods, paints, soap and similar items are manufactured in the North Atlantic states and move via other agencies of transportation to points on and contiguous to the South Atlantic and Gulf coasts. Southern railroads are not able to make rates that will permit western manufacturers to compete on relatively equal terms unless they reduce the rates at all intermediate points. Where they fail to do so the markets of the western manufacturers are narrowed and restricted.

These limitations upon the rail carriers have made it impossible for them to make rates to serve the needs of business and have been the cause of relocation of industry. For example, the petroleum industry has located plants for refining far from the fields of production of raw material. They have located plants for distribution of refined products where they may be served by waterways and trucks, depriving rail carriers of the transportation. Large refineries maintain plants on the Gulf and Atlantic and on the important inland waterways. There is a duplication of plants and multiplication of transportation, as often more than one refinery, and, sometimes several, serve the same territory with their separate facilities.

There is a like situation in the steel industry. Several of the large institutions have fleets—some on the inland waterways. Sugar refiners, cotton shippers and others, by contract or by financial assistance to water carriers, are able to provide transportation of their products between points that may be served by other agencies at rates which rail carriers cannot make under the conditions of the present fourth section. These situations have grown up with the amendments to the fourth section, which restricted carriers' ability to serve the needs of industry. Carriers subject to the act have thereby lost a tremendous volume of business. Industries using other transportation may have

benefited because of the advantage over a competitor, but public interest has suffered.

Mr. Johnson, of the New York Central, discussed particularly the complex situation with respect to movement eastbound to New York from Pittsburgh and eastern Ohio territory over various rail routes of different length and serving different intermediate territory, in compliance with long and short haul regulations. He stated that long-and-short-haul rates involved in this territory have been before the Interstate Commerce Commission, in one form or another, almost constantly since the enactment of the fourth section in its original form in 1887. Rate adjustments that were held to involve no violation of the law, prior to the adoption of the 1910 and subsequent amendments, are subject to revision under the more recent administration of the law, with the result that, as he described it, "there is continuous necessity for going over this ground many times, asking for relief over the same route in connection with various commodities, which continuous process covering identical situations is burdensome, expensive, and the carriers should not be required to bear this burden and expense."

Present Policy a Burden on Producers

Complaints of Western farmers against the level of railroad freight rates will remain unsatisfied until the transcontinental railroads can obtain increased volume of revenue from other traffic, according to F. H. Plaisted, freight traffic manager of the Southern Pacific Lines. The long-and-short-haul clause has resulted in steadily increasing diversion of transcontinental tonnage from the rails to the Panama canal steamship lines in recent years, thereby throwing an increased proportion of the cost of maintaining rail service in the West on products to which other transportation is not available, Mr. Plaisted asserted, and it therefore has been a constant influence toward higher rail rates on the products of the West.

Mr. Plaisted presented a statistical table showing the increasing percentages of the revenues of the Southern Pacific, which he described as representative of all the transcontinental lines, drawn from traffic in perishable products. In 1920 perishable products contributed only 13 per cent of total carload freight revenues, while in 1930, with greater gross revenues than in 1920, the perishable percentage of gross carload freight revenue had increased to 28.4 per cent, and in 1930 it reached 40.4 per cent.

A part of the increase in the percentages of perishable traffic compared to all carload traffic occurred by reason of the greater falling off in the depression years (1930, 1931 and 1932) in general traffic than was the case with perishable agricultural products, but a large part of these increased percentages also resulted from the diversion of business to the canal route from the transcontinental lines which were constructed for the purpose of handling this traffic but have lost it in continually increasing amounts because they have been unable to make competitive rates to the parts which would hold a share of the business against their water competitors.

The adverse effect upon that part of the community which must use railroad service of the diversion of a heavy competitive traffic from the rail lines to the water route grew progressively as shown by these figures from 1920, when perishable traffic furnished only 13 per cent of total carload revenue to 1932 when it furnished over 40 per cent, and this situation must continue until the rail lines are enabled to re-enter the competition for transcontinental business. Every shipper who requires railroad transportation is interested in seeing that these railroads are not denied the opportunity to secure any additional traffic which will add to and not subtract from their net revenues, and will subtract from and not add to the contribution toward main-

tenance of the railroad enterprise required of the products that necessarily move by rail.

Mr. Plaisted asserted that diversion of transcontinental traffic from the rail lines is damaging the producers of the West and the intermountain area, dependent upon rail transportation, as much or more than it is injuring the railroads. He maintained that the producer is interested primarily in the level of transportation rates, and that the present long-and-short-haul policy has been shaped to suit jobbing interests concerned only in the relationships of rates. This policy he contended to be mistaken for the reason that it touches first the rates on what the West buys, rather than giving primary consideration to the rates on the heavier tonnage which the West must sell in Eastern markets. He charged that there is an alliance between the jobbing and steamship interests, in opposition to the Pettengill bill.

Mr. Plaisted was the last representative of the rail trunk lines to appear before the committee. Following appearance of the representatives of the American Short Line Railroad Association, who are likewise supporting the bill, the representatives of the 21 standard railroad labor organizations that have made passage of this measure part of their federal legislative program, were to be heard. Hearing of the supporters of the bill will be concluded with the statements of shipper representatives of the National Industrial Traffic League, the original sponsor of the Pettengill bill.

Railroad Labor Representatives Testify

George M. Harrison, chairman of the Railway Labor Executives' Association, said that the Pettengill bill, which he described as a measure to relieve railroad unemployment, had been made a part of the legislative program of railway labor at the present session of Congress through action taken by the Railway Labor Executives' Association several months ago. He urged its passage as an effective means to remove the competitive handicaps under which the railroads now work in effort to protect themselves against other forms of transportation, and to which unfair discrimination he ascribed a very large proportion of the unemployment in the railroad industry.

Mr. Harrison was followed by J. A. Farquharson, national legislative representative of the Brotherhood of Railroad Trainmen, and Harry See, chairman of the Western Conference Committee of the standard railway labor organizations, through which the fight for repeal of the long-and-short-haul clause was instituted late in 1933 in the western and inter-mountain states. It was explained that this committee had been organized by railroad employees to afford a medium through which they might express themselves, independent of railroad management, "to business men, farmers and their organizations to whom the issue had become clouded by the misrepresentations of one or two rate organizations which, over a period of years, have virtually lived on blocking our efforts to secure modification or repeal of the fourth section."

It was declared by the representatives of railroad labor that it is reasonable to anticipate that passage of the Pettengill bill will re-establish employment for not less than 10 per cent of the railroad men now out of work, or 100,000 men who are now without other prospect of railroad employment. It was further stated that the ultimate result of its passage would be to put 150,000 men back to the work on the railroads, a number stated by Mr. Harrison to be practically equivalent to the total number of men now employed by all the inter-coastal steamship lines.

Mr. See, who spoke specially for railroad employees

in the western section of the country, declared that their contacts with representative business men have convinced them that unwarranted fears are the principal causes of such opposition as there is to passage of the Pettengill bill in the west. "The alarmists have been at work to stir up panicky sentiment. The logic of those who contend that intermountain trade will suffer by the advantages of lower rates to the coast is to our minds without foundation because it overlooks the fact that the coast already is enjoying lower rates by intercoastal water carrier than the railroads ever hope to establish. In fact, there is no intention on the part of the railroads to compete with the steamship lines on a basis of rate equality. In other words, the intercoastal traffic is already moving by boat to the virtual exclusion of the transcontinental railroads whose very organization is part and parcel of the western country. To deprive the railroads of a fair opportunity to share in this traffic is to penalize the states and communities through which the railroads operate. Certain transcontinental traffic, now moving by sea because of the lower rates offered by the intercoastal steamship lines, would tend more naturally to move by rail if the differential rail rates were reduced to a fair competitive level above the prevailing steamship rates."

J. P. Haynes, chairman of a special committee of the National Industrial Traffic League on the fourth section, testified in support of the bill on Wednesday.

President Asks Transportation Legislation

WASHINGTON, D. C.

PRESIDENT ROOSEVELT'S long-promised message recommending a program of transportation legislation was transmitted to Congress on June 7. In language not especially emphatic the President recommended passage of the bill to amend the bankruptcy statute relating to railroad reorganizations, the bills for the regulation of bus and truck and waterway transportation, and extension of the emergency railroad transportation act and the office of co-ordinator for at least another year. He also reiterated his views in favor of regulation of all forms of transportation under a single agency but said that it seems necessary to postpone until the next session consideration of the legislation for a reorganization of the Interstate Commerce Commission into a Federal Transportation Commission.

On the bills he recommended for early passage some progress had already been made. The bus-truck bill has been passed by the Senate, hearings have been held in both houses on the waterway bill, and hearings have been held before the House committee on the reorganization bill. The Senate committee had also reported the resolution to extend the co-ordinator law, including its labor restrictions, for another year, and the House committee had arranged for a hearing on it this week. The President's message follows:

President's Message

It is high time to deal with the nation's transportation as a single, unified problem. For many years in the past transportation meant mainly railroads. But the rise of new forms of transportation, great expenditures of government funds for the development of waterways and for the building of great highways and the development of invention within the railroad

system itself, have enlarged the problem far beyond that conception which dominated most of our past legislation on the subject. In some instances the government has helped a little. In others it retarded. In still others it has given special assistance from time to time—in many instances without rhyme nor reason—in all instances without considering each aspect of the problem in the light of all the others. It is small wonder that in a transportation picture so confused, the public has been inadequately served.

I have from time to time, in this session, addressed the Congress as to the necessity of various forms of government aid and regulation of transportation. I now wish to draw together and supplement these various suggestions for the consideration of the Congress in this session.

In the railroad field there has been a growing recognition of the necessity for reorganization and co-ordination. To that end there was created the office of Federal Co-ordinator of Transportation. The Co-ordinator has considered various ways of effecting economies through the physical co-ordination of railway facilities and services, and, in addition, has studied and made suggestions for legislative measures covering both the railroads and other forms of transportation.

Another type of reorganization necessary for the sound and healthy recovery of our railroad system is financial. Many of our railroads are in a sound financial condition. Others are in need of reorganization. To enable necessary financial reorganizations to be effected inexpensively and promptly the Congress passed, two years ago, certain amendments to the Federal Bankruptcy Act. Shortcomings in this legislation have appeared which have prevented an efficient and extensive use of it. In order to correct these shortcomings the Co-ordinator has recommended certain amendments which are now before the Congress for action. Various differences of opinion as to these amendments are rapidly being adjusted and it is my hope that this legislation may be promptly enacted.

I have already recommended to the Congress my views with regard to the relations that should exist between the federal government and air carriers. Legislation has been introduced for the purpose of carrying out these recommendations. I am in general accord with the substance of this legislation, although I still maintain, as I indicated in my message on that subject, that a separate commission need not be established to effectuate the purposes of such legislation. Air transportation should be brought into a proper relation to other forms of transportation by subjecting it to regulation by the same agency.

A bill for the regulation of highway motor carriers has passed the Senate and is now before the House of Representatives. The practical unanimity with which the Senate passed this bill convinces me of the extent to which all of the difficult adjustments among the interests concerned were made and I recommend its early passage by the House.

Another bill for the regulation of intercoastal and coastwise trade and of some of the inland waterway carriers prepared by the Co-ordinator has been introduced and is before the Congress for action. I recommend that this bill be considered by the appropriate committees and pressed to early passage. I can see no reason why the responsibility for the regulation of intercoastal, coastwise and inland waterways should not be vested in the Interstate Commerce Commission, with proper provision for the departmentalizing of the work of the Commission.

It is my hope that the Interstate Commerce Commission may, with the addition of the new duties that I have indicated, ultimately become a Federal Transportation Commission with comprehensive powers. It had been my intention to recommend this strongly to this session of the Congress, but the time remaining seems to preclude the discussions necessary for such changes. Such a reorganization should not be delayed, however, beyond the second session of the Seventy-fourth Congress.

The efforts toward the co-ordination of the railroads and the general improvement of transportation conditions which were begun by the Emergency Railroad Transportation Act of 1933 should proceed, and I recommend that the Act and the office of Co-ordinator be extended for at least another year.

The resolution to extend the emergency transportation act for a year was passed by the Senate on Monday and at the same time the PWA announced an allotment of \$25,000 to the co-ordinator to complete studies in connection with railroad labor conditions, particularly

with regard to pensions, wages, retirements, and unemployment insurance.

The Pension Problem

The idea of railroad pension legislation at this session of Congress has been definitely dropped by the President and his advisers on the subject, in spite of the fact that the railroad labor organizations have been pressing a revised bill to take the place of the railroad retirement act set aside by the Supreme Court.

The White House on June 6 made public a letter from Attorney General Cummings to the President on the subject and also a letter sent by the President to Chairman Rayburn of the House committee on interstate and foreign commerce calling attention to the suggestion for passage of a resolution by Congress to create a commission to investigate the factual situation and make findings and suggestions "for further legislation, if any." The President had also telephoned to Mr. Rayburn on the subject. The Attorney General's letter follows:

Pursuant to your request of May 10 that the railroad retirement matter be discussed with Mr. Eastman and Mr. Richberg, a conference was held in Mr. Richberg's office on May 23, at which Mr. Richberg, Mr. Eastman and Assistant Attorney General Stephens were present and discussed the matter. The following conclusions, which I believe are sound, were reached at that conference:

(1) It was deemed inadvisable to request the Supreme Court to grant a rehearing. On May 25 a release was issued to the press setting forth the reasons why a rehearing was not requested, as follows: "Every phase of the case and every issue of fact and law urged by the government, or which has been emphasized by others interested, was fully considered and discussed by the court in both the majority and minority opinions. There have been brought to the attention of the department no new issues which could be presented to the court; and to the contentions made by the government in brief and in argument it is believed that nothing could be added."

(2) In view of the sweeping character of the decision it was determined that it would be unwise to attempt to secure new legislation at this session of Congress.

(3) It was determined, however, in conformity with Mr. Eastman's suggestion, that Congress be requested to pass a resolution to create a commission to investigate the factual situation and make findings and suggestions for further legislation, if any.

You will recall that on May 17 the Co-ordinator wrote you suggesting such a resolution, and on May 20 you referred this matter to me for recommendations.

On the following day Mr. Rayburn introduced H. J. Res. 314, providing for the appointment of a nine-man commission to report to Congress by March 1, 1936, the results of "a thorough investigation of all pertinent facts for the purpose of determining whether a sound retirement and annuity system made applicable by law to carriers by railroad engaged in interstate commerce will promote efficiency and safety in interstate transportation or will otherwise enable such carriers better to perform their duty to serve the public (having in mind ultimate as well as proximate results), and whether such a system is desirable and in the public interest."

The commission also would be authorized to hold hearings respecting desirable provisions of a sound retirement and annuity system. In the making of such investigation the commission would be authorized to consider the experience of other industries and of governments, as well as of the railroad industry, and avail itself of the assistance of all agencies of the federal government. With its report it would be directed to include such recommendations for legislation, if any, as it may deem necessary to give effect to its conclusions, and an appropriation of \$60,000 is proposed for the purpose.

In other words the commission would investigate to

see whether Chief Justice Hughes was correct in his dissenting opinion in the railroad retirement act case when he said that the majority decision had denied to Congress "the power to pass any compulsory pension act for railroad employees." Meanwhile the latter are still covered by the provisions of the social security bill which is pending in Congress but which provides for a lower scale of pensions than those asked by the railroad labor organizations. The proposed commission would be composed of three Senators chosen by the Vice-President, three Representatives chosen by the Speaker, and three persons named by the President. Co-ordinator Eastman's organization has made the factual study considered requisite for the consideration of pension legislation.

Some fifty or more state legislative representatives and general chairmen of the railroad labor organizations have been brought to Washington during the past week or so by the Railway Labor Executives' Association and have been calling on all members of Congress to urge passage of the resolution to extend the co-ordinator law and also a new pension bill. Apparently they have given precedence to these measures over their general program which includes the six-hour day, train-limit, and full-crew bills.

A while back the truck-regulation bill was frequently referred to as representing a scheme of the railroads to stifle their competitors but last week's issue of the A.T.A. News Bulletin announced that "American Trucking Associations, Inc., will continue its relentless drive to secure enactment of the Eastman motor carrier bill, with amendments, despite the abrupt termination of the NRA Code." The association had previously supported the legislation, with some amendments, but the Supreme Court decision holding codes invalid has stimulated interest in I.C.C. regulation.

A special advisory committee of the organization met in Washington on June 5 and decided to call a combined meeting of the directors and the policy, executive, and legislative committees for June 17 and 18 in Washington, "to formulate plans for mustering the industry's heaviest artillery in a concerted and prolonged effort to obtain Congressional approval of federal regulation acceptable to the industry." It was also stated that "the industry needs federal regulation now more than ever before." The motor bus code authority had announced immediately after the court decision that it would hold a meeting and wind up its business as soon as possible but expressed the hope that all operators would voluntarily continue to operate under the maximum hour and minimum wage standards of the code.

Representative Keller, of Illinois, has introduced as H. R. 8371 a bill representing numerous changes from the form of the railroad retirement act and providing for somewhat larger pensions, based on 2 per cent of the employee compensation for each year of service. The bill provides also for voluntary contributions by the employees equal to the total of both the employee and the carrier contributions required. Representative Keller originally introduced the bill advocated by the Railroad Employees' Pension Association which later developed into the retirement act.

THE LONDON MIDLAND & SCOTTISH of Great Britain has recently acquired 220 containers thereby bringing its total stock of this rail-highway freight-handling equipment to 6,635 units. The new containers include 120 of the insulated type for perishable traffic and 100 of a new design for furniture. Some of the insulated containers will be fitted with bunkers for a chemical refrigerant, while others will be fitted with ice bunkers.

Co-ordinator Extension Passed by Senate

WASHINGTON, D. C.

THE resolution introduced by Senator Wheeler extending for a year the effective period of the emergency railroad transportation act, 1933, under which Joseph B. Eastman was appointed federal co-ordinator of transportation, was passed by the Senate without debate on June 10 and the similar resolution introduced in the House by Representative Crosser was expected to be taken up in the House before the end of the week, as the law would otherwise expire on June 16. There was little discussion in the Senate, although at the request of Senator Hastings, Senator Wheeler put into the record a letter addressed to him by President Pelley of the Association of American Railroads expressing the railroad opposition to the further extension of the office. The letter was published in the *Railway Age* of May 25, page 810.

Although the original purpose of the act was to eliminate wastes and unnecessary expense in railroad operation the chief impulse for its extension came from the railroad labor organizations, that have been insistently urging passage of the resolution in order to keep in effect the labor restrictions in Section 7 (b) of the law which have prevented the Co-ordinator and the railroads from effecting any important economies by co-ordination which would reduce employment. Extension of the law was also recommended by President Roosevelt on the ground that "the efforts toward the co-ordination of the railroads and the general improvement of transportation conditions which were begun" by the act, should proceed, since all of the Co-ordinator's reports have not yet been completed and the legislative program which he has recommended is still under consideration.

Turney and Castle Resign

Two of the principal men in the Eastman organization for the past two years are leaving it at this time. They are J. R. Turney, director of the Section of Transportation Service, which has issued its reports on its surveys of merchandise traffic, passenger traffic, and freight traffic, and which is still working on a market and organization survey, and O. C. Castle, director of the Car Pooling Section, which has issued its report recommending a freight car pooling plan. Mr. Turney, formerly vice-president of the St. Louis Southwestern, is to engage in the practice of law at Washington, and Mr. Castle is to return to his former position of superintendent of transportation of the Southern Pacific lines in Texas and Louisiana.

Shortly before the passage of the resolution in the Senate the Federal Emergency Administration of Public Works had announced an allotment of \$25,000 to the Co-ordinator to complete studies in connection with railroad labor conditions, particularly in regard to pensions, wages, retirements, and unemployment insurance. Some reports along this line have been issued by the Labor Relations Section but others are to come. The Co-ordinator had previously received allotments amounting to about \$524,000 from the PWA for similar purposes, in addition to the amounts contributed by the railroads in accordance with the terms of the law, \$1.50 a mile, or about \$400,000 for the first year and \$2 a mile, or about \$530,000, for the second year. Under the resolution the latter amount would be continued for another year. One of the principal reports yet to be

issued is that on the subject of transportation subsidies, which has been in tentative form for several months but is now in process of final revision.

Co-ordinator Eastman this week made public a summary of the activities of his organization for the past two years, concluding with the following paragraph as to "The Future": Now that much of the work of research has been done, the time has come to translate its results into action. This is possible, even if the present restrictions on reduction in railroad employment remain in the law and are enforced. Because of the steady attrition in railroad labor forces resulting from permanent separations from the service, the effect of these restrictions will only be to delay the realization of economies. In time they can be fully obtained, just as happened in similar circumstances in Great Britain, after the consolidation of the railroads into four systems following the close of the World War. In the event of an upturn in traffic and railroad business, requiring in and of itself additional employment, the economies could be realized very quickly, notwithstanding the restrictions."

With a single exception, Mr. Eastman said, the co-ordinating committees have not recommended that the Co-ordinator issue any order. The Southern committee asked him to require the railroads in that region to observe certain principles with respect to the construction of industrial side tracks. This matter is receiving consideration. It was evident at the outset, he said, that the severe restrictions in Section 7 (b) upon reductions in railroad employment would be an obstacle to im-



J. R. Turney

O. C. Castle

mediate accomplishment in the elimination of unnecessary expense, and that because of this situation little in the way of initiative could be anticipated from the Regional Co-ordinating Committees. In the circumstances, the co-ordinator concluded that he could accomplish most by carrying on and promoting intensive research into the possibilities.

A favorable report on the resolution for an extension of the co-ordinator law, but with no provision for the \$2 a mile assessment against the railroads, was voted by the House committee on interstate and foreign commerce on Wednesday after a brief hearing at which Co-ordinator Eastman was questioned regarding his proposed activities and the necessity for continuing the office and the extension was opposed by J. J. Pelley, president of the Association of American Railroads and R. C. Fulbright, representing the National Industrial Traffic League. C. A. Miller, general counsel of the American Short Line Railroad Association, appeared in support of the resolution because of a provision in the

law that "no routes now existing shall be eliminated except with the consent of all participating lines or upon order of the co-ordinator," and because Mr. Eastman's organization is making a special survey of the short line situation. Mr. Eastman pointed out that several of his reports are yet to be completed and that some of those already made are being studied by the railroads. If the railroads desire to put into effect some of the suggestions, he said, it may become necessary for them to come to him for orders, if there is some law in the way, such as the anti-trust laws. He said that he believed that in the circumstances the resolution should be passed, although if the office were to be made permanent some changes ought to be made in the law. He was questioned by several members of the committee as to what he still hoped to accomplish and as to the need for an assessment on the railroads.

Mr. Pelley pointed out that while the railroads were in favor of the original co-ordinator bill they were opposed to the law as passed including the labor restrictions. "You told us to make economies," he said, "and then you told us by this labor provision not to make economies." He filed with the committee a copy of the letter he had addressed to Senator Wheeler on the subject, in which he said that the railroad association has all the power needed to "do the job." He also said the railroads did not intend to be unfair to their employees and may be relied upon to extend to them "every consideration the traffic will bear."

George M. Harrison, chairman of the Railway Labor Executives' Association, testified in support of the resolution, saying that there is still the same need for protection against reduction in employment as when the law was passed.

Railroads Oppose Train Limit Bill

(Continued from page 924)

ing and conditions are such as to make it difficult to understand a signal to back up or go ahead it may be necessary for the rear brakeman to walk forward and the head brakeman to walk back part way.

Labor Legislative Representatives

John T. Corbett, national legislative representative of the Brotherhood of Locomotive Engineers, had told the committee that the railroads would be benefitted by the provision for shorter, faster trains to furnish a more frequent service to communities that he said have been complaining of lack of it since the railroads have lengthened their trains. "We believe," he said, "that long, heavy, slow-moving trains have driven much business to busses and trucks, and that proper service cannot be rendered by the practice of sacrificing service to tonnage records and scrapping small locomotives and going into debt for bigger ones." He also emphasized the difficulty in transmitting signals, saying a man in dark clothing may find it almost impossible to have his signals seen, especially against a dark background.

W. D. Johnson, national legislative representative of the Order of Railway Conductors, who had testified previously, took the stand again to "rebut in advance" the testimony that he said would be given by the railroads in opposition to the bill. He asked that the committee, if it had any doubts as to the utter impossibility of properly interpreting day or night signals on trains of greater length than specified in the bill, arrange for

a practical test before a special committee at Potomac yard.

L. C. Booth, general attorney of the Southern Pacific, described the circumstances relating to the Arizona train-limit law passed in 1912, the recent veto by the governor of California of a similar bill passed by the legislature, and the passage of a similar law in Nevada against which the railroads obtained an injunction.

The Shippers' Viewpoint

W. H. Day, manager of the transportation Department of the Boston Chamber of Commerce, speaking on behalf of several New England shippers' organizations, appeared in opposition to the train-limit bill and others on the railroad labor program, saying that shippers are being forced to manifest an interest in efficient transportation service and that while the bill is proposed as a safety measure it seems to them that its real purpose is to create additional jobs and that the more trains are run the greater is the possibility of accidents. He pointed out that the railroads had spent billions for improvements to make long trains possible and that experience has established that long trains have actually promoted safety as well as better service to the shippers.

"We view with real concern," said Mr. Day, "such a move to undermine the one transportation system on which we are dependent," because any increase in operating costs must be reflected in the selling price and, since the railroads have no monopoly of transportation, if their prices become unattractive the public would no longer buy from them and traffic would be diverted to their competitors. Railroad service as a whole is better today than ever before, he said, but the shippers believe that the railroad rates are too high as compared with those of their unregulated competitors and that any increase in operating costs that will further aggravate the rate situation will stimulate the use of other forms of transportation and lead to a gradual breakdown of railroad transportation.

Senator Murray, of Montana, who had introduced the maintenance inspection bill, made a brief statement in support of it saying that he had no idea that the railroads generally were neglecting maintenance but that some of them were doing so, and that where they are now maintaining their tracks and bridges in safe and suitable condition no additional burden would be placed upon them but that where they do not their objections should not be entertained.

* * *



On the Sierra Railway of California

Communications and Books . . .

Antagonizing Supply Companies—A Reply

NEW HAVEN, CONN.

TO THE EDITOR:

The sales manager's letter on page 777 of the *Railway Age* of May 18, 1935, interested me immensely, because it touches a matter to which I devote a large amount of personal attention and thought, and further because the condition complained of is exceptional and not general. Railroad officers are not entirely to blame for what the sales manager believes to be discourteous treatment. The cause frequently lies with the salesman. Exercising diplomacy to callers and correspondents consumes half my time and much more than half my energy and mentality. It is the policy of the New Haven, and I believe of other railroads, to treat all callers and correspondents as respectfully as we expect them to treat our representatives when they call. That is what I term "customer diplomacy." With this principle, no one can disagree.

As to the efficacy of its application, remember that a railroad purchasing department is a busy place. Ours receives 1,000 letters and sends out 800 each day. It is manifestly impossible to answer every letter in such studied English as will create the most favorable impression upon every recipient, particularly when the letter is not accompanied by an order. Those written by the higher officers should be phrased with care, but it is too much to expect that busy clerks, pressed with a large volume of work and correspondence, can always avoid some abruptness that may be interpreted as discourtesy—however unintentional that result may be.

Day after day important work awaits my attention while I phrase diplomatic replies to many unnecessary letters and receive visits from streams of callers, many of whom have nothing definite to discuss except to preserve contact or to complain because they do not receive enough orders. Many days while such streams of callers continue for five or six hours to the exclusion of all other work, I sit in despair of efforts to give attention to important matters that can only be attended to either by letting the callers wait interminably long periods or by refusing to see them, or to return to the office several evenings per week and practically every Sunday to revel in an opportunity to study without interruption important matters than cannot be disposed of during the day.

Although my friends tell me that I am gifted with a fairly decent disposition, it is impossible to keep patient and be entirely courteous with many salesmen who call. Some are not posted on the matters they bring up, the handling of which without offense requires true diplomacy, getting out files, reading letters and showing papers, all of which are in their files but have not been studied by them before their call. Others deliberate for unnecessarily long periods, not only taking up my time, as to which I make no complaint, but also delaying interminably numbers of other callers. Still others make the most unreasonable requests and demands and insist on unreasonable preferences which, if granted, would create much more discontent than can possibly be created by denying their requests. Such requests must be handled with the utmost diplomacy in an effort to send the salesmen away happy even though they do not take orders home with them. I enjoy the calls of most salesmen but when one of those described above calls after patience has been exhausted by a long line of his predecessors, it would be a miracle indeed and too much to expect from a human if he did not suspect that his call was not enthusiastically welcomed.

Since the N.R.A. brought equality of prices in many industries, it is a growing custom for salesmen personally to present their bids to the head of the purchasing department, insisting that an order be made out immediately while they wait for it. It is also a growing custom for bidders to call on the telephone advising bids are being placed and endeavoring to exact a promise that an order will be placed with the caller. I have received as many as five long-distance telephone calls on a very small order that would ordinarily be handled as a matter of routine in the purchasing department. Even on busy days when I am completely tied up on other matters or out of the city,

such callers refuse to be shunted to anyone in the purchasing department for handling and express great displeasure to my secretary and occasionally complain that the vice-president refuses to see them or to answer telephone calls, which is not true. Such men are difficult to satisfy.

We have on our stock list something over 55,000 items, in addition to thousands of kinds of repair parts. We place over 50,000 orders each year, so it may be readily recognized how impossible it is for the particular officer chosen by a salesman to know as much about the details of a matter with which a salesman is thoroughly familiar as is necessary for an intelligent discussion. Never the less, many salesmen feel very much put out when turned over to those who actually handle such details. Only recently a salesman I had sent to the mechanical department to discuss a highly technical article complained to the president and requested the president to make an appointment to hear his story.

It is inevitable that in spite of all efforts to the contrary, sales managers and salesmen are going to be displeased more often than they can possibly be pleased. Some of our bidding lists contain more than 25 bidders on items than can be ordered from only one, which pleases one and displeases the other 24. Fortunately among the 24 are human beings that accept the fortunes of business and say "better luck next time;" more unfortunately there may be found among each group of unsuccessful bidders one who is a bad loser and he may be expected to be heard from sometimes in the most unreasonable way. Answering complaints of such unsuccessful bidders does not improve the disposition of the one complained of.

Fortunately the great majority of salesmen are good sports as to getting and losing orders, and it is a pleasure indeed to do business with most of them without having to be on guard to avoid unintentional offense. It is strange that we have never had a complaint of discourtesy to a salesman who has been successful in getting an order?

Sales managers should be assured that diplomacy is the watchword of all railroads and whenever apparently curt and discourteous letters are received, it is due entirely to the heavy pressure under which those who write the letters are working and to the fact that they do not have the time meticulously to emulate Lord Chesterfield in their choice of words.

C. E. SMITH,

Vice President, New York, New Haven & Hartford

New Book

Coal and Coal Products, A List of Books and Other Information Regarding. By F. R. Wadleigh. Paper, 6 in. by 9 in., 64 pages.

Price \$1.00. Copies may be obtained from the author, Cecil Apartments, 1026 15th Street, N. W., Washington, D. C.

Mr. Wadleigh has had a wide experience with coal operations. He is a consulting engineer in that field, was formerly chief of the Coal Division of the Department of Commerce, was at one time associated with the Bureau of Mines, and served as federal fuel administrator during 1922-23. His list of books in the English language concerning coal and its use is most complete. It gives the title of the work, the name of the author, where published, and the date of publication. Unfortunately the name and address of the publisher are omitted, but sufficient information is given to make it possible to locate the volumes in a well conducted library.

The list is divided into classifications, including year books, briquetting of coal, chemistry and physics of coal and coke, coal fields and resources, combustion, economics, geology, handbooks which contain references to coal, hydrogenation of coal, international coal trade, labor and wages, marketing, mines and mining, preparation of coal, purchase, smoke, storage, transportation, and use. Under the head of use are various classifications, including carbonization, locomotive fuel, pulverized coal, heating (domestic and industrial), and steam making. Other sources of information about coal are also listed, including coal trade associations, reports of commissions, proceedings of conferences, departments of mines in coal producing states, and state geological surveys. Government departments and bureaus are also listed, as are publications, technical societies and educational institutions which give some attention to coal and its use.

NEWS

Harrison Urges Immediate Regional Consolidations

Will provide only effective remedy applicable to the existing situation, he says

With the prospect of federal legislation to meet the financial crisis facing the railroads postponed for another year, a program of immediate consolidations into regional systems was urged on June 12 by Milton W. Harrison, president of the Security Owners Association of New York, addressing the convention of the American Institute of Banking at Omaha, Neb.

"Attrition in railroad net income has now reached the highest point of the depression," declared Mr. Harrison. "The prospective deficit for this year for Class I roads may reach \$150,000,000, compared with losses of \$43,000,000 in 1934. During the past four years the railroads, in order to maintain solvency, have borrowed from the Reconstruction Finance Corporation the sum of \$450,000,000. Collateral which secured these loans now has been largely exhausted by the borrowers; and, unless the government makes substantial modifications in the terms of its lending policy, as is still hoped for, little further aid can be expected in meeting the carriers' emergency financial needs.

"The more one studies the question of rehabilitation of railroad credit, the more the conviction is reached that consolidations provide the only effective remedy applicable to the existing situation. There is no more logical reason for the continued existence of 700 short-line railroads and 140 odd Class I carriers today than there was, fifty or more years ago, for the continuance of those component parts which went into forming great systems.

"The problem of financing any such ambitious program under present conditions is frequently urged as offering an insurmountable barrier. These difficulties, of course, cannot be minimized. Yet from the practical standpoint, it would seem better that the government lend to a limited number of well-balanced systems, than to continue with its present negative policy of indefinite support for weaker carriers. Such a plan again raises the question of reduction of personnel; but, for this, Mr. Eastman has proposed the 'dismissal wage,' following the British precedent, though in its present form this proposal is acceptable neither to labor nor management and must be strengthened.

"Beyond jealousies of rival systems, the real obstacle to consolidations in America has been the bitter opposition of organized labor. Preservation of jobs has taken

precedence over economic progress. Yet the travesty of this situation is that the goal of increased employment, set up as labor's objective, is never realized. The railroads, unable to absorb an increased labor unit cost, concentrate their energies on developing new operating efficiencies. It is the only way they can maintain solvency. For the four years between 1929 and 1933, this reduction in personnel, amounting to 689,654 persons, represented a 42 per cent decrease in number with a 52 per cent decrease in wages paid. The average wage per employee, however, for the year 1934 was \$1,506 before the return of the voluntary wage deduction, or about 86 per cent of the 1929 level. Thus for those out of work the prospect of additional employment, held out by such measures, remains a cruel delusion."

Western Lines Extend Low Rates for Six Months

The reduced passenger fares on western lines, which were first placed in effect in December, 1933, and which will expire on September 30, will be extended six months or until March 30, 1936.

New Haven Commutation Rates Not Reduced

The Public Service Commission of New York, following complaints, formal and informal, which have been the subject of hearings for nearly two years, has decided that no reduction in commutation rates to and from New York city is warranted at the present time, and that not until the traffic should increase to 50 per cent more than the present volume would the commission be justified in considering the question; and any such increase is a matter of "the unknown future." Chairman Maltbie took no part in the proceedings.

Reduction in Transcontinental Lumber Rates Suspended

The Interstate Commerce Commission has suspended from June 10 to January 10 tariff schedules published by the transcontinental railroads proposing a reduction from 79 cents to 72 cents per 100 lb., in rates on lumber from Pacific coast and interior origins to points east of the Indiana-Illinois state line. The proceeding has been assigned for hearing on June 24 at Chicago before Commissioner Porter and Examiner Copenhafer. The reductions were proposed to meet increasing competition of trucks and water lines through the Panama canal and were protested by southern railroads as well as by lumber interests in the East and South.

Calls Private Ownership More Truly Democratic

Under that system the public can and does determine economic developments, says Dunn

"That under private ownership and management of industry the American public can and does determine important economic developments in a more truly democratic and effective way than it possibly could under government ownership is being strikingly illustrated by what is occurring now in transportation in this country," said Samuel O. Dunn, chairman of the Simmons-Boardman Publishing Corporation and editor of *Railway Age*, in an address on June 11 before the New Orleans Board of Trade and the Traffic Club of New Orleans, in connection with the celebration of "Railroad Week" being sponsored by the western railways.

"The people themselves, by the way they decide to travel and ship, are daily casting many millions of votes indicating the kind of transportation service they want, and they are thereby promoting the greatest revolution in transportation since the introduction of railroads more than a century ago. Their voting so much within recent years, as travelers and shippers, for air and highway transportation has shown they want kinds of service not previously rendered. It is in direct response to this mute expression of public preferences that railway managements and manufacturers are coming forward with so many improvements in railway service, equipment and materials that a few years of improved earnings and buying power will result in a general revolution in railroading as sensational as many changes that already have begun recently, despite unprecedentedly poor earnings.

"Since they started the 'safety first' movement 25 years ago, when their accident record was very bad, our railways have subordinated speed and every other consideration to safety. The result has been a reduction of 84 per cent in fatalities to passengers and employees. *The average number of travelers by rail killed during the last five years was only 44 annually. This was less than one-half of the number of persons killed in automobile accidents every day.* The most sensational recent development on the railroads, in response to a demand indicated by the public's use of airplanes and automobiles, has been an unprecedented increase in the speeds of passenger trains in almost every part of the country. This increase in speeds has been accompanied and accomplished largely by the introduction of new kinds

of motive power, including both Diesel and steam engines. Less sensational, but perhaps equally important, have been improvements introduced to increase the comfort and luxury of travel. The railways have taken the lead in developing and adopting air-conditioning. The introduction of air-conditioning began only about four years ago, but today they have about 6,000 air-conditioned passenger cars. Numerous other improvements also have been made by them in their day coaches and by the Pullman Company in its sleeping cars, in addition to which passenger fares have been drastically reduced throughout a large part of the country. Some of the most important improvements have been made possible only by the development of new types of motive power, lighter metals and other inventions within recent years.

"Nor has the freight service been neglected. Store-door delivery and other means have been developed and adopted to meet truck competition, the weight of freight cars is being reduced to save operating expense, and freight service has been made speedier and more dependable.

"There is active competition for public favor both between the railways and other carriers, and between the railways themselves. It is inconceivable that under government management such great efforts would be made under the most adverse conditions to provide the public with the kind of transportation that it seems to want because, under government management, the public could not exert such direct and effective pressure in behalf of what it wanted.

"Any assumption that recent remarkable developments indicate that railway managements previously had been unprogressive would be highly erroneous, as is illustrated by the phenomenal reduction of accidents I have already mentioned. When the railways were returned to private operation fifteen years ago, the most insistent public demand was for the elimination of 'car shortages.' Within a few years they so increased their service that the public apparently has almost forgotten that there ever were car shortages. Their financial situation, when they were returned to private operation, made it necessary to effect large economies, and the present depression made this necessity much more compelling. Under government operation, in 1919, their operating expenses were \$4,400,000,000. In 1933, under private operation, they were only \$2,250,000,000, a reduction of almost 50 per cent, which was accomplished by curtailing the pay roll and all other operating expenses in almost the same proportion.

"A renaissance of railway transportation awaits only a revival of railway earnings due to improvement in general business and adoption of government policies treating the railways and their competitors alike. Railway managements and manufacturers have available all the means of accomplishing a revolution excepting the capital to carry it out. As fast as improvement in railway earnings and credit renders them practicable, the railways will make increases in their expenditures for improvements which will for years contribute greatly toward maintaining and increasing the national prosperity."

P. R. R. Freight Service Electrified from Potomac Yard to New York

The Pennsylvania's electrification for freight service has now been completed from Potomac Yard, Va., near Washington, through to New York; and electrically-operated freight trains, which has been in service north of Baltimore, are now being run throughout the line.

American Transit Association

The Fifty-fourth annual convention of the American Transit Association will be held at the Ambassador Hotel, Atlantic City, N. J., from September 23 to 25. The convention will include meetings of the Association's affiliated organizations, including the newly-formed American Transit Association Bus Division. Based upon a vote of the manufacturer members of the Association, the executive committee decided to dispense with a manufacturers' exhibition.

Club Meetings

The annual outing of the Richmond (Va.) Traffic Club was held on June 15 and 16 at the Chamberlain Hotel, Old Point, Va. The program included a brief business session, a banquet, a golf tournament and other events.

The Pacific Railway Club will hold its next meeting in the Pacific Electric Railway building, Los Angeles, Cal., on Friday evening, July 12. The speaker will be Robert S. Henry, assistant to the president of the Association of American Railroads.

Railroad Employment in May

Class I railroads, excluding switching and terminal companies, have reported to the Interstate Commerce Commission a total of 997,018 employees as of the middle of the month of May. This is an increase of 2.1 per cent as compared with the number in April, but a decrease of 4.51 per cent as compared with the number in May, 1934. The maintenance of way and structures group showed a reduction of 6.27 per cent and the maintenance of equipment and stores group a reduction of 6.81 per cent. The train and engine service showed a reduction of 2.82 per cent.

Central of Georgia Pensions

H. D. Pollard, receiver of the Central of Georgia, having been duly authorized by the Federal Court, has resumed the placing of old employees on the pension roll, action in this respect having been suspended during the last nine months while the government pension law was in litigation. The rolls in April, 1934, contained the names of 89 disabled and 85 superannuated employees. These 174 individuals received in 1934 a total of \$118,182. The receiver is now refunding the two per cent which was deducted from the pay of the employees of the road during the time that the Federal act was in litigation.

Japanese Beetle Quarantine

The Secretary of Agriculture has issued a revision of the quarantine against the Japanese beetle, which is enforced from June 15 to October 15. It is in force in large parts of the territory extending from

Maine to West Virginia. It places restrictions on the transportation of fruits and vegetables in refrigerator cars and motor vehicles; and interstate transportation of cut flowers, portions of plants without roots, beans in the pod, bananas and certain fruits, with some exceptions is forbidden, except with a Federal permit or certificate. On various fruits in very small quantities the restrictions do not apply. Throughout the 12 months of the year, certificates must be had for transporting soil, compost, etc.

Resolution Proposed for Winding Up Affairs of Retirement Board

Representative Crosser, of Ohio, has introduced in the House a resolution, H. J. Res. 310, to provide for the payment of compensation and expenses of the Railroad Retirement Board, which according to an opinion by the Comptroller General became non-existent after the Supreme Court's decision of May 6 declaring the railroad retirement act unconstitutional, and to provide for the winding up of its affairs and the disposition of its property and records. The resolution proposes an appropriation for the purpose, for services to be rendered in the 60 days following the decision, and directs the turning over of the records, papers, and property of the board to such agency as the President may direct, including a report of the board's activities and experience.

Steam Railway Accident Statistics February, 1935

The Interstate Commerce Commission's completed statistics of steam railway accidents for the month of February, now in preparation for the printer, will show:

Item	Month of 2 months ended February with February 1935 1934 1935 1934			
Number of train accidents:				
Total	581	628	1,223	1,141
(At highway grade crossings, included in total)	19	18	36	30
Number of casualties in train, train-service and non-train accidents:				
Trespassers:				
Killed	153	141	292	270
Injured	188	150	374	327
Passengers on trains:				
Killed	1	8	4	8
Injured	195	191	462	311
Employees on duty:				
Killed	47	57	106	100
Injured	1,290	1,505	2,756	2,800
All other non-trespassers:				
Killed	122	115	253	253
Injured	620	603	1,329	1,212
Total—All classes of persons:				
Killed	323	321	655	631
Injured	2,293	2,449	4,921	4,650

* Casualties to "Other non-trespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and non-trespassers, were as follows:

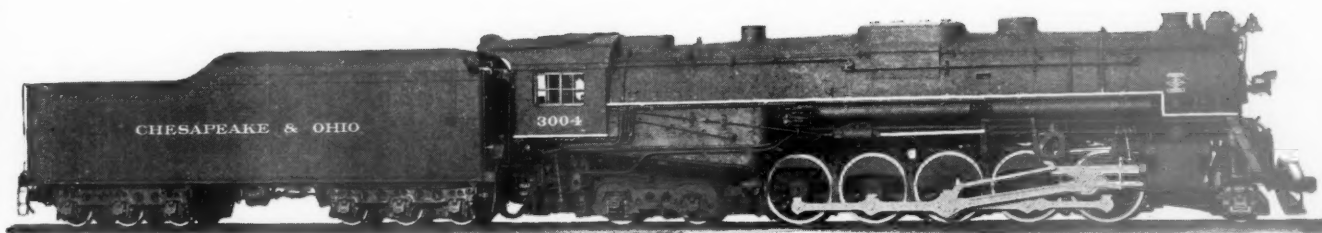
Killed	110	112	234	240
Injured	443	415	913	875

New Equipment Installed

New freight cars installed by the Class I railroads of the United States totaled 755 in the first four months of 1935, according to reports received by the Association of American Railroads. In the same period last year, 1,093 new freight cars were placed in service, and, in the same period two years ago, there were 893.

Fifteen new steam locomotives and 39

HIGH SPEED FREIGHT SERVICE...



needs modern motive power

The greater the gross-ton-miles per train hour, the greater the return on the investment, not only on the locomotive itself, but on the entire transportation plant.

With the same weight on drivers the modern steam locomotive is capable of an increase of 66-2/3% in ton-miles per hour over a Mikado only 10 years old.



new electric locomotives were placed in service in the first four months of this year. The railroads in the first four months of 1934 installed no new steam locomotives but 6 new electric locomotives.

New freight cars on order on May 1 totaled 1,449 compared with 15,964 on the same day in 1934 and 1,561 on the same day in 1933. The railroads on May 1 this year had on order one new steam locomotive and 53 new electric locomotives. New steam locomotives on order on May 1, 1934, totaled 21, and on the same date in 1933, there were three. New electric locomotives on order on May 1, 1934, totaled 107, but no reports are available as to the number on order on May 1, 1933.

Freight cars and locomotives leased or otherwise acquired are not included in the above figures.

Suggests Operating Company to Unify New England Roads

Allan M. Pope, president of the First of Boston Corporation, advocated a plan for the unified operation of New England railroads, in an address at the annual meeting of the Massachusetts Bankers Association at Swampscott, Mass., on June 7. Under Mr. Pope's proposal four of the principal New England roads—the New York, New Haven & Hartford, the Boston & Maine, the Maine Central and the Bangor & Aroostook—would create a jointly-owned operating company, the common stock of which would be distributed among the participating carriers in direct proportion to the facilities or business which each road turned over to the operating company. In this way, he said, economies of unified operation could be attained without any great amount of new financing or the long delay which would attend any attempt to bring about an actual merger of the roads.

Commenting further on his proposal Mr. Pope said: "I am personally convinced that the time has come when a united front of New England interests must be made which looks to an immediate solution of the New England railroad problem. I feel that the time is getting close when it may be too late to express your independent views."

Survey of Passenger Carriers in New Hampshire

The New Hampshire State Planning and Development Commission has recently published Part I of a report by its Advisory Committee on Transportation on public passenger carriers in New Hampshire. The present report deals with railroads, electric railways, motor buses, taxicabs, contract carriers, and star mail routes. Parts II and III, to be issued later, will deal with transport by air and the state highway system, including the regulation of motor traffic and the transportation of school children.

Part I is divided into six sections, considering in turn the development of the railroad system, present railroad facilities and problems, the decline of the electric railway, the emergence of bus transportation, the essentials of a co-ordinated transportation system and recommendations concerning public regulation. After consid-

ering each of the foregoing in detail, the report recommends for New Hampshire a co-ordinated set-up which would utilize the railroads for long-haul high-speed service, the bus for intermediate service, including much of that now provided on railroad branch lines, and the star route mail carriers for the transport of passengers in areas of light traffic density. Air transportation would be used for inter-connections at important points between high speed rail lines and air routes.

Economic Effects of 30-Hr. Week

The economic effects of a general application of the 30-hr. week to industry are analyzed in a comprehensive factual study, entitled "The Thirty-Hour Week," which has been prepared by the Committee on Labor Problems of the National Conference of Business Paper Editors and the Associated Business Papers, Inc. This survey, which comprises the third of a series of factual studies dealing with current national questions of interest to industry, was prepared following the introduction in Congress of the Black-Connery bill which would make the 30-hr. week compulsory. Proponents of this bill claim that the 30-hr. week would increase employment, stimulate industrial production, release the flow of credit, and raise the standard of living. The study, on the other hand, concludes that it would do none of these things and, in fact, would badly disrupt production schedules; that it would ultimately result in a lowering of the real wages of the worker, that in most industries it would have the effect of ultimately placing at least part of the recently added employees back on the unemployment rolls, that it would accentuate the undesirable aspects of seasonal production schedules, that it would have an adverse effect on farm purchasing power and, finally, that it would retard business recovery. Copies of this study may be obtained at 10 cents each from the Associated Business Papers, Inc., 340 West Forty-second street, New York.

Bus Decisions in New Jersey

The Board of Public Utility Commissioners of New Jersey, in a decision dated June 5, approved several applications in connection with the train-connection bus operations of the Pennsylvania-Reading Seashore Lines. The decision permits the transfer to this road of municipal consents from the Pennsylvania-Reading Motor Lines, Inc., for the operation of two buses between Wildwood and Avalon via Cape May Court House; approves municipal consents for the operation of eight additional buses on that portion of the route between Cape May Court House-Stone Harbor and Avalon; permits the operation of the buses on an alternate route between Cape May Court House and Avalon, via Swanton, and approves the temporary discontinuance of that portion of the Wildwood-Avalon route between Cape May Court House and Wildwood. The decision points out that the arrangements approved are those which experimental operation has indicated to be the best for serving the communities involved since the consolidation of the South

Jersey rail lines of the Pennsylvania and Reading into the Pennsylvania-Reading Seashore Lines.

The Board in another decision denied the application of the Jersey Central Transportation Company for a rehearing of the latter's application for approval of municipal consents for the operation of 30 buses between Phillipsburg, N. J., and Roselle Park. The original application was denied in a decision dated December 23, 1931, and the board now finds "no proof of any changed conditions which would justify the board in superimposing additional service upon existing facilities."

A third order approves the application of the Pennsylvania Greyhound Transit Company for approval of municipal consents for the extension of its Seaside Park-Manasquan bus route from its present terminus at Manasquan to the station of the New York & Long Branch in Sea Girt.

"World's Heaviest Shipment"

The Delaware & Hudson reports the movement over its line, on March 22 last, of a piece of electrical machinery from Schenectady, N. Y., to Wilkes-Barre, Pa., en route to Benning (Washington), D. C., which weighed 367,000 lb.; and with the car on which it was loaded, 473,900 lb., slightly more than the heaviest Delaware & Hudson locomotive. This is believed to be the heaviest shipment ever carried on a single railroad car. It was a generator shaft, rotor and poles for a frequency converter for the Pennsylvania Railroad, to be used in connection with the electrification of the main line of the road between Wash-



ington and New York. The apparatus, boxed, measured 16 ft. 10 in. high, from the rail, and 12 ft. 5½ in. wide. It was carried on a 16-wheel car, having a load limit of 397,900 lb., the car, empty, weighing 104,100 lb. At one place, the outer rail of the track had to be raised a little to allow the load to clear a standpipe; and for a considerable distance it was necessary to run the train (southward) on the northbound track; and at points where the clearance between the tracks was insufficient, train movement on the southbound track had to be suspended. The illustration shows the load in a bridge at Otego; and at Center Village there was a bridge allowing still less clearance, namely, one inch.

The car was delivered to the Pennsyl-



ARE EXPENSIVE IN EVERY WAY

To haul its train efficiently the locomotive must have tractive effort adequate to start the train and to accelerate quickly to road speeds. It must have ample horsepower capacity to maintain the desired schedules.

The first factor is one of cylinder capacity and adhesive weight—the second, primarily one of boiler capacity.

By providing ample boiler capacity together with cylinders capable of developing the needed horsepower in the fundamental design, and utilizing the added tractive effort of The Locomotive Booster for starting and accelerating, a smaller, lighter locomotive can be made to do the same work as a locomotive in the next class above.

In this way every pound of locomotive weight is made effective and the lighter unit will cost correspondingly less to operate and to maintain.

The Booster capitalizes idle weight and spare steam.



Because material and tolerances are just right for the job, genuine Franklin repair parts give maximum service life.

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vania at Wilkes-Barre, but it had to be sent to Baltimore over the Western Maryland via Fulton Junction, because of insufficient clearance in the Baltimore tunnels.

Program for Superintendents' Convention

The American Association of Railroad Superintendents will hold its forty-first annual convention at the Hotel Sherman, Chicago, on June 18-20. The program for this convention is as follows:

Tuesday Morning

Address on Trends in Transportation—M. J. Gormley, executive assistant, Association of American Railroads

Report of Committee No. 5—Operating Aspects of the Demand for Faster Passenger Train Service—F. G. Gurley (assistant to vice-president operation, Chicago, Burlington & Quincy), chairman

Tuesday Afternoon

Report of Committee No. 2—Operating Aspects of the Demand for Faster Freight Train Service—J. A. Murphy (superintendent transportation, Canadian National), chairman

Address by C. S. Duncan, economist, Association of American Railroads

Report of Committee No. 6—Curbing Highway Crossing Accidents—M. F. Steinberger (manager highway transportation, Baltimore & Ohio), chairman

Address on Keeping Everlastingly At It in Safety—George B. Vilas, vice-president and general manager, Chicago & North Western

Wednesday Morning

Report on Committee No. 1—Meeting Today's Demand in L.C.L. Service—W. L. Fox, (superintendent, Belt Railway of Chicago), chairman

Address on The Problems of Freight Claim Prevention in 1935—Joe Marshall, special representative, Freight Claim division, Association of American Railroads

Address on Signaling As a Factor in Railway Operation—Burt T. Anderson, special representative, Union Switch & Signal Company and General Railway Signal Company

Luncheon

Address on Current Transportation Problems—by Ralph Budd, president, Chicago, Burlington & Quincy

Wednesday Afternoon

Report of Committee No. 4—Ways and Means to Expedite the Movement of Cars Through Terminals—F. F. Laird, (supervisor yard and terminal operation, Chesapeake & Ohio), chairman

Address on Up to the Minute Statistics for the Superintendent—R. C. White, assistant general manager, Missouri Pacific

Round Table for the informal consideration of transportation problems raised by members

Thursday Morning

Report of Committee No. 3—Ways and Means Employed by Superintendents in Maintaining Supervision as Their Territories Have Been Extended—T. K. Faherty (superintendent, Baltimore & Ohio), chairman

Closing business

Thursday afternoon will be devoted to an inspection of new high speed trains in the Union and the North Western stations, Chicago.

Boston-Montreal Coach Trains to Have Club-Lounge Cars

The Boston & Maine, the Central Vermont, and the Canadian National on June 23 will join in introducing what their joint statement calls "the first day coach trains ever operated with club-lounge cars as part of their equipment." The innovation will be a feature of the new "Ambassador," which will be operated daily in both directions between Boston, Mass., and Montreal, Que., on a schedule 1 hr. 45

min. shorter than the fastest present running time between these two cities. Regular day coach rates will apply, with no extra charge for the use of the club-lounge car and its porter service.

The northbound Ambassador will leave Boston daily at noon, Eastern Standard Time, and, with stops at Lowell, Mass., and a few New Hampshire and Vermont points, will arrive in Montreal at 8:15 p. m.; southbound it will leave Montreal at 11 a. m., Eastern Standard Time, and arrive in Boston at 7:15 p. m.

The coach equipment of the train will be air-conditioned and the club-lounge cars will have 39 individual lounge chairs and two small divans; they will be up to date in every respect and attractively decorated.

"In providing these new trains with club-lounge cars and deluxe air-conditioned coaches, with no extra fare, and in establishing a new high-speed running time between Boston and Montreal and intermediate points, the Boston & Maine, the Central Vermont and the Canadian National are making another experiment in our efforts to attract the traveling public back to the rails," the joint statement of the three roads says.

"Not only will the new trains provide an innovation in day coach travel, but we have attempted to arrange the schedules so that business men may have a morning in Boston, and arrive in Montreal the same night, with similar arrangements for several business hours in Montreal in the morning, with arrival in Boston the same evening. At intermediate stations, the trains are intended to provide a similar service for business men, and especially in the summer months, the new trains will provide a fast early afternoon northbound service to vacation centers in Vermont."

Establishment of the new trains will automatically cancel operation of the present Ambassador, which leaves Boston for Montreal at 8.00 a. m. (Eastern Standard Time), and Montreal for Boston at 8.40 a. m. A substitute service will be provided and operated on the present schedule, it was stated, and passengers from points between White River Junction, Vt., and Concord, N. H., will have a connection with the new Ambassador, southbound, by a local train which will be operated from White River Junction to Concord on a schedule just in advance of the new Ambassador.

Truck-Loading Services at New York

Railroads serving New York have filed with the Interstate Commerce Commission tariffs providing for optional loading and unloading services at all of their New York City terminals. Under the tariffs, which become effective July 1, the carriers set up a basic charge of three cents per 100 lb. or 60 cents per ton for the loading or unloading of patrons' trucks at railroad stations, when such service is performed by railroad; the charge is to be four cents per 100 lb. or 80 cents per ton for heavy lift freight or machinery, while that for the handling of butter, eggs and poultry in packages is to be ¾ cent per package or five cents per barrel for poultry.

The service will be performed by the railroads only when a specific request for

it is made; shippers therefore retain the privilege of performing their loading with their own employees or through any contract loading system which they may elect to use.

Several New York shipping organizations, led by the Merchants Association of New York, had for some time been complaining of the activities of so-called "public loaders" at railroad and steamship pier stations and had urged the railroads to establish this optional service. The Merchants' Association, in a statement issued on June 11, calls the filing of the tariffs "a long step towards eliminating the abuses which have hitherto existed due to the inability of shippers to perform their own loading and unloading operations."

The Tariff Bureau of the Merchants' Association made the following comment on the development:

"The filing by the railroads of these new tariffs is a benefit to shippers. The railroads have done exactly what the Merchants' Association and others asked both the steamship lines and the railroads to do when more than a year ago it initiated a campaign to bring about an optional loading service at consignee's choice.

"These new tariffs mean that the shipper will hereafter be free to use or not to use the public loaders as he sees fit. It will be within the option of the shipper or truckman to choose his own loading service. Those that find it to their advantage so to do may continue to use any independent loading contractors. The fixed charges which have been established by the railroads for performing the service will, however, serve as a check against the exaction of exorbitant and unfair charges at railroad terminals. On the other hand, when the shipper finds it to his advantage through his own truckman to load or unload his own freight, he should be able to do so. This action by the railroads should tend to bring down the cost of freight in New York City and it also should have the effect of preventing disturbances due to attempts to enforce unfair restrictions and charges."

New York Railroad Club Outing

All who attend the New York Railroad Club annual outing at the Westchester Country Club, Rye, N. Y., on Thursday, June 20, will be letting themselves in for "a slice of spring time, a slice of the finest countryside in America, a full portion of good fellowship, replete with outdoor activity which will leave memories that will last until the 1936 outing rolls around," according to a circular issued by the general committee in charge of the affair. The committee further gives assurance that the usual "democratic spirit" of the Club will prevail and thus outing day will again be a day on which "the purchasing agent doth not devour the pedlar except, perhaps, at golf."

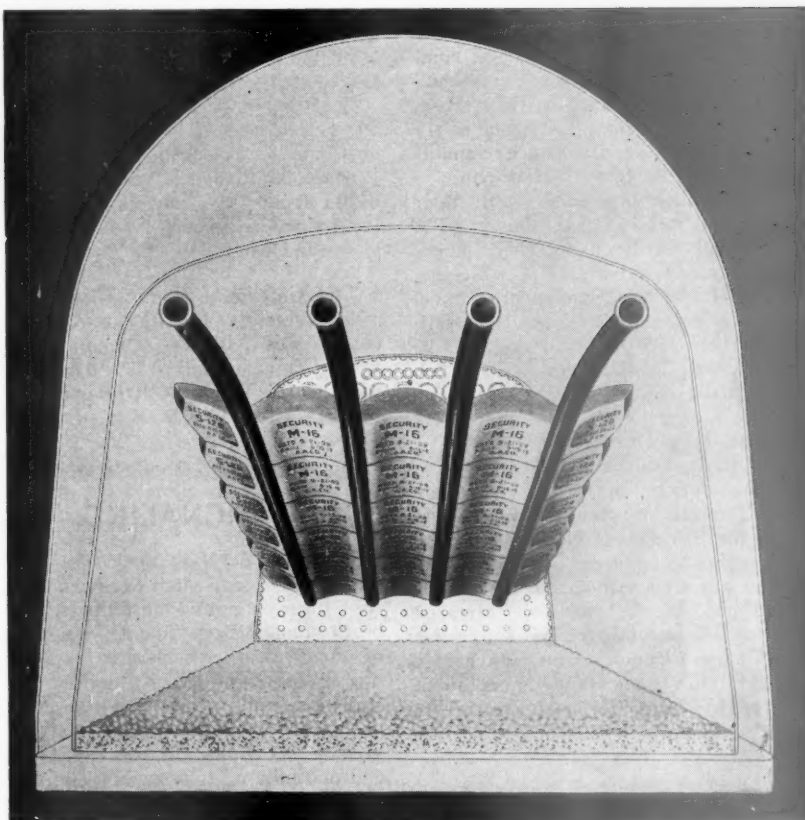
Events of the day will include the usual golf tournaments and putting contests, swimming, quoits, ping pong, baby dolls, skee ball, cards, entertainment and dinner. For the regular annual golf tournament open to all members and guests the Brady Cup will be awarded to the player with the low net score. Other prizes in this

Continued on next left-hand page



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The engineering design of the Security Brick Arch embodies years of experience in locomotive operation, constant study of combustion problems and careful research into refractory materials.

In every way Security Brick Arches are made to render in the locomotive firebox, maximum fuel economy at minimum cost.

**HARBISON-WALKER
REFRACTORIES CO.**
Refractory Specialists



**AMERICAN ARCH CO.
INCORPORATED**
*Locomotive Combustion
Specialists* * * *

tournament will be awarded for the low net, low gross and second low gross in each of the three handicap classes; also, two guest prizes and a kicker's prize. In the open golf team championship the winning company team will receive gold medals and will be awarded the custody for one year of the Herbert H. Vreeland Trophy. Prizes will also be awarded for the other field events.

The organization set-up of the committees in charge of the outing this year includes an innovation in that in addition to Carl Beck, the general chairman, the title of "generalissimo" has been given to the Club's president, C. E. Smith, who heads the list of committeemen. Others on the general staff are: C. C. Warne, executive vice-chairman; C. H. Carroll, vice-chairman in charge of golf; G. B. Allison, vice-chairman in charge of games; and A. E. McGuire, assistant to general chairman. D. W. Pye heads the general committee which includes also two vice-chairmen—A. N. Dugan and C. A. Gill. Past-president George Le Boutillier is one of the vice-chairmen of the attendance committee, of which E. A. Jones is chairman.

Other committees, together with their respective chairmen, are as follows: Reception, Frank Hedley; publicity, James G. Lyne; transportation, C. G. Melvin; dinner, G. H. Ord; entertainment, Samuel F. Pryor, Jr.; skee ball, H. J. Dempsey; games, J. E. Leonard; baby doll, A. B. Nilsen; putting, R. F. Hayes; ping pong, W. B. Quail; cards, H. N. Ransom; swimming, Howard P. Cook; quoits, W. P. Lambert.

Among the guests who are expected to attend the outing is former Governor Alfred E. Smith of New York, who is listed in the circular as chairman of the goodfellowship committee. Also on this committee are two vice-chairmen—H. H. Vreeland and W. G. Besler. Member tickets for the outing are \$5 and guest tickets \$7; these include green fees, games and dinner. For games and dinner alone the charge will be \$3 for members and \$4 for guests.

Equipment and Supplies

FREIGHT CARS

THE GRAND TRUNK WESTERN is inquiring for 150 gondola cars of 70 tons' capacity.

LOCOMOTIVES

THE ALIQUIPPA & SOUTHERN has ordered one 0-8-0 switching locomotive from the American Locomotive Company. This locomotive will have 25 in. by 28 in. cylinders and a total weight in working order of 231,000 lb.

THE BANGOR & AROOSTOOK has ordered two locomotives of the 4-8-2 type from the American Locomotive Company. These

locomotives will have 22½ in. by 30 in. cylinders and a total weight in working order of 315,000 lb. Inquiry for this equipment was reported in the *Railway Age* of May 25.

IRON AND STEEL

THE PERE MARQUETTE has ordered 1,400 tons of rails from the Inland Steel Company.

THE TEXAS & PACIFIC has ordered 7,700 tons of rails from the Tennessee Coal, Iron & Railroad Company.

THE CENTRAL VERMONT has ordered 450 tons of steel from the American Bridge Company, for a bridge at Hartford, Vt.

THE GRAND TRUNK WESTERN has ordered 8,450 tons of rails, placing 6,200 tons with the Illinois Steel Company and 2,250 tons with the Inland Steel Company.

THE NORFOLK & WESTERN is asking for bids until 12 o'clock noon, Standard Time, June 26, at Roanoke, Va., for its requirements from July 1 to September 30, for approximately 4,500 tons steel shapes, plates and bars.

THE CANADIAN PACIFIC has placed rail orders recently for 6,834 tons of 85-lb. section rail with the Dominion Steel & Coal Company and 8,576 tons of 85-lb. rail and 12,480 tons of 100-lb. rail with the Algoma Steel Corporation of Sault Ste. Marie, Ontario.

SIGNALING

THE CITY OF NEW YORK has contracted with the Union Switch & Signal Company for furnishing and installing automatic block signaling on "line D," an extension of the present city-operated rapid transit line in the Borough of Queens. This installation will extend from Roosevelt avenue to 178th street, Queens, and will aggregate six miles of four-track railroad and one mile of two-track. The signaling will be electro-pneumatic, and the contract includes five electro-pneumatic interlockings, one of which is for a large storage yard at 178th street. Interlocking levers will total over 200.

TRADE PUBLICATION

TRAIN OPERATION WITHOUT ORDERS.—The Union Switch & Signal Company, Swissvale, Pa., has issued a 56-page booklet, designated as Bulletin No. 150, on the subject of train operation under the centralized-traffic-control signal system. This bulletin describes and illustrates the methods employed and the advantages obtained in the operation of trains without written orders. Prepared primarily from the point of view of dispatchers, trainmasters and other operating officers, this publication includes a brief description of the C. T. C. system, a comparison of C. T. C. with train-order operation, and a discussion of the adaptability of the C. T. C. system to various operating conditions.

Construction

CHESAPEAKE & OHIO.—A contract has been given to John C. Senter, Roanoke, Va., for an addition to this company's hospital and the rearrangement of the existing building at Clifton Forge, Va., to cost about \$123,000. See *Railway Age* March 9, page 372.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—A contract has been awarded to Barnett & Record, Minneapolis, Minn., for the reconstruction for a portion of this company's enginehouse at Minneapolis, at a cost of \$40,000.

ERIE-LEHIGH VALLEY.—The New York Public Service Commission has approved a low bid of \$113,725 submitted by Freeman & Jones, Inc., Cleveland, Ohio, to cover the portion of the cost of the structure required to carry the tracks of the Erie in connection with the elimination of the William street and South Ogden street crossings of the Erie and the Lehigh Valley in the city of Buffalo.

LEHIGH VALLEY-NEW YORK CENTRAL-BALTIMORE & OHIO-SOUTH BUFFALO.—The order for the elimination of the seven grade crossings at Tift street, Buffalo, N. Y., has been amended by the New York Public Service Commission principally to change the division of the railroads' share of the cost of the elimination. The amended order also modifies the original plans for placing the grade of the highway above the grade of the railroads.

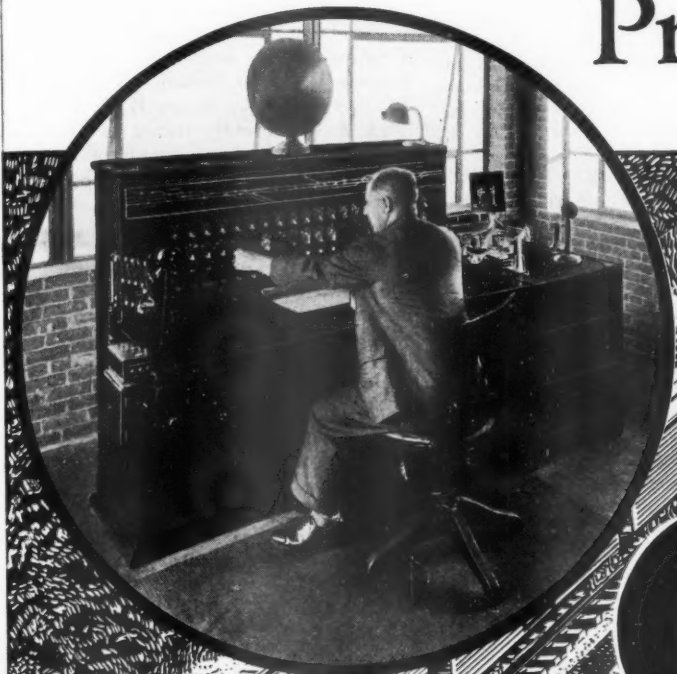
MAYO & COOK'S HAMMOCK.—The Interstate Commerce Commission has canceled its certificate dated October 1, 1934, authorizing this company to construct a line from Mayo, Fla., to Cook's Hammock, 13 miles, and has authorized the Live Oak, Perry & Gulf to acquire a line extending 10.8 miles southeastward from Foley Junction on its main line, and to extend the new line about 10 miles from its southern terminus to a point to be known as Swann (near Cook's Hammock). The price to be paid for the line to be acquired by the L. O. P. & G. is \$65,826 and the cost of extending the line is estimated at \$64,057.

PENNSYLVANIA.—The New Jersey Board of Public Utility Commissioners has again denied the petition of this road for an extension of time in which to complete the work of eliminating the grade crossing of its track on the highway China Hill road, also known as Colonia boulevard, Colonia, N. J. The board disallowed on June 13, 1934, a previous petition somewhat similar in form.

UNION PACIFIC.—With a bid of \$793,191, the firm of Orino, Birkmeier & Saramel was the low bidder for the work of constructing another section of the relocated line of the Oregon-Washington Railroad & Navigation Co. (part of the U. P. Sys.) at the Bonneville dam, which is 42 miles east of Portland, Ore. While the contract for this work has not yet been awarded, the United States Engineer office at Port-

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Meeting an Emergency Promptly



As an 80 car freight was passing the dispatcher's office, the dispatcher observed a car off center with the front trucks almost to the middle of the car. Had this occurred outside of C. T. C. territory, the dispatcher could not have notified the crew before the train reached the next office about four miles away with the possibility that the front end of the defective car would have dropped to the track before reaching that point. » » » » » » » » » »

As this was in the C. T. C. territory, the route had already been lined up for the through movement. The dispatcher immediately restored the signal in advance of the train to "stop"—the train stopping at the end of double track. Phoning to the dispatcher from that point as per instructions, the trainman was told of the situation and the defective car was cut out. » » » » » » » » » »

This is another of the actual experiences which explains the enthusiasm of the dispatchers and division officers as well as train crews for "Union" C. T. C. Ask our nearest district office to detail the many operating and economic advantages of this modern signal system. No obligation. » » » » » » » » » »

1881

Union Switch & Signal Co.

1935

NEW YORK

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SAN FRANCISCO

land has been authorized to make the award to the low bidder. This project involves a total of 4.26 miles of line, a contract for another section of the line having previously been awarded to Orino, Bell & Malcolm, Portland (see *Railway Age* for October 27, 1934).

Supply Trade

John S. Lehmann has been elected a member of the board of directors of the **St. Louis Car Company**, St. Louis, Mo., to fill the vacancy caused by the death of **Sears Lehmann**.

Robert C. Beggs has been appointed advertising manager of the **Toncan Culvert Manufacturers' Association**, Youngstown, Ohio, to succeed **H. N. Pickett**.

John W. Vogler & Company, 1218 Olive street, St. Louis, Mo., and **Thomas D. Crowley & Company**, 6 North Michigan avenue, Chicago, have been appointed by the **Cleveland Tractor Company**, Cleveland, Ohio, to represent the latter's railroad sales division respectively in the St. Louis and southwestern area, and in the Chicago area.

Charles W. Daniels, who has been in charge of the **Harnischfeger Corporation's** Philadelphia, Pa., office, has been appointed general sales manager for contractors' equipment, industrial products, arc welders, hoists, and brewery equipment, with headquarters at Milwaukee, Wis. He is succeeded in Philadelphia by **L. M. Stout**, who has been appointed to fill the vacancy as district manager for that territory.

The Dayton Rubber Manufacturing Company, Dayton, Ohio, has established a railway sales and service office at 11 Park place, New York City. **Erwin J. Schmidt**, mechanical engineer, railway division, will be in charge of the New York office. **E. K. Lofton** will be in charge of the Chicago office at 20 North Wacker drive. The main headquarters of the railway division of the Dayton Rubber Manufacturing Company will be in Chicago and all of the activities of the railway division will be directed by Mr. Schmidt.

OBITUARY

E. Payson Smith, president of the Illinois Railway Equipment Company, Chicago, died in that city on June 8 after an illness of several months. During the early part of his career he was employed by the Illinois Central in the transportation department and in 1905 left railroad service to enter the railway supply field as sales representative of the Standard Railway Equipment Company, Chicago. In 1911, he established his own business, engaging in the sale of industrial equipment, and in 1925 he re-entered the railway supply business, organizing the Illinois Railway Equipment Company and continuing as its president until his death.

Financial

AKRON, CANTON & YOUNGSTOWN.—Trustees' Certificates.—The Interstate Commerce Commission has authorized the trustee of this company and the Northern Ohio to issue \$380,000 of 4 per cent registered serial collateral certificates to be sold at par to the Public Works Administration and the proceeds used for maintenance.

ALTON.—R. F. C. Loan.—The Interstate Commerce Commission has amended the terms of a loan of \$2,500,000 to this company to permit the substitution of \$415,000 of Monongahela stock (by the Baltimore & Ohio) in place of notes and advances deposited with the Reconstruction Finance Corporation, upon the reduction of the amount of the loan to \$1,894,633 by the payment of the balance in cash.

BOSTON & MAINE.—Abandonment.—The Interstate Commerce Commission has authorized this company to abandon a portion of a branch line extending from Farmington, N. H., to Lily Pond, 25 miles.

BURLINGTON - ROCK ISLAND.—Abandonment.—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Hubbard, Tex., to Hillsboro, 25.18 miles.

CENTRAL OF NEW JERSEY.—Abandonment of Operation.—The Interstate Commerce Commission has authorized this company to abandon operation of the Ogden Mine R. R., between Nolan's Point, N. J. (on Lake Hopatcong) and Edison, 9.7 miles, provided that it purchase at \$66⅔ a share all outstanding stock of the railroad offered to it for sale for a period of 60 days.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—Reorganization.—Following a meeting of directors of this company with large institutional holders of its securities in New York on June 13, it was stated that compromises had been effected on many disputed points and that it is expected that a voluntary plan will be agreed upon, eliminating the necessity for filing under the federal bankruptcy law.

ELGIN, JOLIET & EASTERN.—Bonds.—The Interstate Commerce Commission has authorized this company to abandon operation of a portion of a branch line extending from a point near Goose Lake, Ill., to South Wilmington, 12.1 miles.

ERIE.—Merger.—The New Jersey & New York and the New Jersey & New York Extension, both controlled by the Erie, have applied to the Interstate Commerce Commission for authority for a merger of the two companies into the New Jersey & New York Railroad.

KENTUCKY & INDIANA TERMINAL.—Bonds.—The Interstate Commerce Commission has authorized this company to issue \$651,000 of first mortgage 4½ per cent bonds. The proprietary companies (B. & O., Southern and C. I. & L.) agree to use the K. & I. T. property and pay rental, in

addition to its other revenues, such sums as may be required to pay all operating expenses, taxes and interest on first mortgage bonds. The issue is authorized for sale at 90, which would make the cost to the railroad 5.213 per cent.

KANSAS CITY TERMINAL.—M-K-T Participation.—The Interstate Commerce Commission has authorized the Missouri-Kansas-Texas to become one of the proprietary companies in the K. C. T. instead of a non-proprietary tenant as heretofore, assuming liability as guarantor for \$49,569,000 of the terminal company's first mortgage bonds.

NEW YORK CENTRAL.—Bonds.—The Toledo & Ohio Central has applied to the Interstate Commerce Commission for authority to issue \$12,500,000 of refunding and improvement mortgage bonds to be delivered to the New York Central. Of the total, \$7,500,000 is to be used to retire bonds of the T. & O. C., and \$5,000,000 is to reimburse the N. Y. C. for additions and betterments to its leased property. The N. Y. C. has been authorized to issue \$1,500,000 of 4 per cent notes, secured by \$3,000,000 of its 5 per cent refunding and improvement mortgage series C bonds, and to sell them to the Public Works Administration, using the funds for maintenance.

ST. LOUIS-SAN FRANCISCO.—Abandonment.—The trustees have applied to the Interstate Commerce Commission for authority to abandon the line from Wardell, Mo., to Yukon, 8.97 miles.

WHEELING & LAKE ERIE.—Refunding Mortgage Bonds.—This company has announced its intention of converting, subject to approval of the Interstate Commerce Commission, \$8,130,000 of refunding mortgage bonds held in its treasury into refunding mortgage series D bonds, which are offered for exchange, par for par, for its outstanding series A and B bonds (also \$8,130,000), as of September 1. The company proposes to sell such part of the issue as is not demanded in exchange to secure funds to redeem on this date such of the outstanding series A and B bonds as are not voluntarily presented for exchange. The series D bonds will bear interest at 4 per cent, will have a sinking fund provision and will mature in 1966.

Average Prices of Stocks and of Bonds

	Last week	Last week	Last year
Average price of 20 representative railway stocks ..	33.45	32.39	43.52
Average price of 20 representative railway bonds ..	74.66	73.56	78.56

Dividends Declared

Dayton & Michigan.—8 Per Cent Preferred, \$1.00, quarterly, payable July 2 to holders of record June 16.
Joliet & Chicago.—\$1.75, quarterly, payable July 1 to holders of record June 21.
Mahoning Coal R. R.—\$6.25, quarterly, payable August 1 to holders of record July 15; Preferred, \$1.25, semi-annually, payable July 1 to holders of record June 21.
Mobile & Birmingham.—Preferred, \$2.00, payable July 1 to holders of record June 1.
Norwich & Worcester.—Preferred, \$2.00, quarterly, payable July 1 to holders of record June 12.
Pittsburgh & Lake Erie.—\$1.25, semi-annually, payable August 1 to holders of record June 28.
Virginian.—\$2.00, payable July 1 to holders of record June 15.

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.. and so they *Patched* the *Gunbore*

SOMEBODY thought they could save money . . . so they patched the gunbore.

Superheater units are carefully manufactured so that the interior offers the least resistance to the "straight shooting" of the steam. After the units become worn from many years of service—DON'T PATCH THEM—have them brought back to their original condition by the Elesco unit RE-manufacturing service. Obstructions in the steam path from patch repairs will cause havoc with the steam travel.

Play safe with the Elesco unit REmanu-facturing service.



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Railway Officers

EXECUTIVE

R. L. Williams, assistant to the president of the Chicago & Eastern Illinois, with headquarters at Chicago, has had his title changed to senior executive assistant.

J. H. Pearlstone has been elected vice-president of the St. Louis, San Francisco & Texas, with headquarters at Dallas, Tex.

Willard F. Place, whose appointment as vice-president of the New York Central at New York was noted in the *Railway Age* of June 8, was born on June 5, 1896. Mr. Place was graduated from Cornell University and entered the service of the New York Central as office assistant to the vice-president of finance and corporate relations in January, 1925. In December, 1925, he was appointed assistant to vice-president of finance and corporate relations.

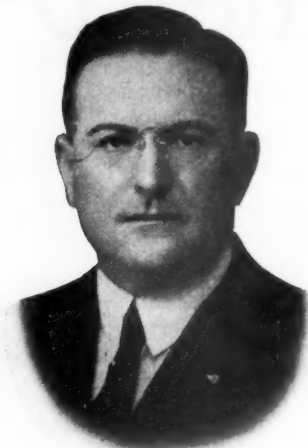


Willard F. Place

Mr. Place was appointed assistant vice-president finance and corporate relations in January, 1930, and in November, 1934, he became executive assistant to the president, which position he held at the time of his recent appointment.

W. K. Weaver, whose appointment as executive assistant for the Railway Express Agency at New York was noted in the *Railway Age* of June 8, became an express messenger in 1901 for the Southern Express. He later specialized in operations and claim work, organizing claim bureaus at Jacksonville, Fla., Chattanooga, Tenn., and Richmond, Va. When the Adams Express purchased the Southern, Mr. Weaver became general traffic agent for both companies at New York. When the express companies were consolidated in July, 1918, Mr. Weaver organized the Kanawha division, covering a substantial part of the territory of the Chesapeake & Ohio, the Richmond, Fredericksburg & Potomac and the Baltimore & Ohio systems, with headquarters at Richmond. In January, 1933, he concluded a fifteen-year period as operating superintendent at

Richmond; he then served the operating vice-president at Atlanta. In May, 1934, he became superintendent of organization



W. K. Weaver

reporting to the president, and chairman of the Standard Practices Committee, which positions he held at the time of his recent appointment as executive assistant.

FINANCIAL, LEGAL AND ACCOUNTING

Jose Laguardia has been appointed general treasurer of the National Railways of Mexico, with headquarters at Mexico, D. F., succeeding **J. R. Platt**.

Walter J. Conaty, assistant tax commissioner and director of valuation of the Chesapeake & Ohio, with headquarters at Huntington, W. Va., has been appointed tax commissioner, with the same headquarters. **R. J. Williams** has been appointed assistant tax commissioner.

Karl W. Fischer, superintendent of relief and employment of the Chicago, Burlington & Quincy and chairman of its pension board, has been appointed land and tax commissioner, with headquarters as before at Chicago, to succeed **Joseph A. Connell**, deceased. Mr. Fischer was



K. W. Fischer

born on June 18, 1883, at Quincy, Ill., and entered the service of the Burlington in 1909 as a timekeeper, serving in this position and as a tourist car conductor and

city ticket agent until 1918. In that year, Mr. Fischer was appointed assistant trainmaster, which position he held until 1919, when he was advanced to trainmaster. Two years later he was appointed transportation inspector on the staff of the general manager, with headquarters at Chicago, and in 1924, he was appointed to the same position at Omaha, Neb. In 1925, Mr. Fischer was promoted to assistant superintendent of the LaCrosse division and five years later he was further advanced to superintendent of the Creston division, with headquarters at Creston, Iowa. In December, 1931, following a consolidation of divisions, Mr. Fischer was appointed assistant superintendent at Omaha, with jurisdiction over the Lincoln and Omaha divisions. On July 27, 1934, he was appointed superintendent of the relief and employment departments and chairman of the board of pensions, with headquarters at Chicago.

TRAFFIC

W. C. Connor, general agent for the Louisiana & Arkansas at San Francisco, Cal., has been appointed to the newly-created position of Pacific Coast agent, with the same headquarters.

H. W. Porter, general agent for the Chicago, Milwaukee, St. Paul & Pacific at San Francisco, Cal., has been transferred to Los Angeles, Cal., to succeed **F. C. Fairbairn**, who in turn has been transferred to San Francisco.

A. A. Boyle, city freight and passenger agent for the Gulf, Colorado & Santa Fe, at New Orleans, La., has been appointed general agent, freight and passenger departments, with the same headquarters, succeeding **J. A. Fitzgerald**, who has been appointed division freight agent at Dallas, Tex., where he succeeds **C. S. Riley**, who has retired.

H. F. Burnaugh, chief clerk in the general freight department of the Denver & Rio Grande Western, at Denver, Colo., has been promoted to assistant general freight agent with the same headquarters, succeeding **T. K. Earley**, who has been transferred with the same title to the duties formerly discharged by his father, **H. J. Earley**, whose death is noted elsewhere in these columns.

Gus Richmond, whose appointment as general freight agent in charge of rates and divisions for the Atlanta, Birmingham & Coast was noted in the *Railway Age* of June 8, was born on June 26, 1887, near Cleveland, Tenn., and attended the public schools of Tennessee. Mr. Richmond entered railroad service in 1907 in the local freight agent's office of the Southern at Chattanooga, Tenn., and served in various positions until 1909, when he became rate clerk. In June, 1911, he was transferred as rate clerk to the district freight office at Chattanooga. In January, 1913, Mr. Richmond became chief clerk and in April, 1916, was transferred to the general freight office of the Southern at Atlanta, Ga., as executive rate clerk. He continued in the general freight office of the Southern until June, 1920, except for a

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STANDARD



TIRES

AXLES

SPRINGS

CRANK PINS

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few months in the Army during the War. On the latter date he entered the service of the Atlanta, Birmingham & Atlantic (now Atlanta, Birmingham & Coast) as chief clerk in the general freight office at Atlanta, Ga. In October, 1923, Mr. Richmond was appointed commerce agent in addition to the position of chief clerk, continuing in this dual capacity until his recent appointment.

Henry Stiles Young, whose appointment as general freight agent in charge of solicitation and development for the Atlanta, Birmingham & Coast was noted in the *Railway Age* of June 8, was born on April 19, 1887, at Lilburn, Ga. Mr. Young entered railroad service in June, 1906, with the Georgia, serving as traveling freight agent and commercial agent until July, 1918. He served as industrial agent for the Atlanta, Birmingham & Atlantic (now A. B. & C.), the Georgia and the Atlanta & West Point during federal control. In March, 1920, Mr. Young was appointed industrial agent for the Atlanta, Birmingham & Atlantic and in January, 1926, he was appointed assistant general freight agent for that road, the position he held until his recent appointment.

OPERATING

H. G. Beasley, commissary of the Chicago, Burlington & Quincy, with headquarters at Chicago, has had his title changed to superintendent of dining cars.

C. L. Clingen, night general yardmaster of the Baltimore & Ohio at Lima, Ohio, has been promoted to terminal trainmaster at Indianapolis, Ind., succeeding **H. R. Purkhiser**, who has been transferred to Youngstown, Ohio, where he replaces **O. C. Lott**, who has been transferred to Willard, Ohio, to replace **T. C. Smith**, promoted.

A. A. Iams, superintendent of the Toledo division of the Baltimore & Ohio, who has been appointed general superin-

tendent of the Western Lines, with headquarters at Cincinnati, Ohio, as noted in the *Railway Age* for June 8, was born on December 31, 1874, at Englewood, Ohio.



A. A. Iams

He entered railway service on December 15, 1890, as a night operator on the Cincinnati, Hamilton & Dayton (now part of the Baltimore & Ohio), at Dayton, Ohio, later being appointed yard clerk at the same point. On September 14, 1898, he was transferred to Wellston, Ohio, as an operator, later being advanced to dispatcher and then to chief dispatcher in January, 1905. On October 1, 1912, Mr. Iams was promoted to train master, holding this position until June 1, 1915, when he was further advanced to superintendent. He served in this capacity on the Ohio, Indiana and Toledo divisions, being located on the latter division at the time of his recent appointment as general superintendent at Cincinnati.

PURCHASES AND STORES

M. M. Moffitt, assistant purchasing agent of the Southern Pacific, with headquarters at Portland, Ore., has been ap-

pointed supervisor of sales and salvage, with headquarters at San Francisco, Cal., succeeding **G. E. Gardner**, deceased. **E. H. Polk**, district storekeeper at Sacramento, Cal., has been appointed assistant purchasing agent, with headquarters at Portland, to succeed Mr. Moffitt. **H. J. Smith**, chief clerk to the general storekeeper with headquarters at San Francisco, Cal., has been appointed district storekeeper, with headquarters at El Paso, Tex., succeeding **E. J. Becker**, who has been transferred to Sacramento, to replace Mr. Polk.

OBITUARY

H. J. Earley, assistant general freight agent on the Denver & Rio Grande Western, with headquarters at Denver, Colo., died on May 5 following an illness of several weeks.

David H. Hoops, assistant freight traffic manager of the Chicago & North Western, with headquarters at Chicago, died at his home in that city on June 8, following a short illness. Mr. Hoops had been in the service of the North Western continuously for fifty years. He was born on June 21, 1869, at Chicago, and entered the service of the North Western in 1885, as a clerk, serving in this position and as a rate clerk until 1892. In the latter year Mr. Hoops was appointed chief clerk in the traffic department at Chicago, and in 1898 he was made general agent at Des Moines, Iowa. He then served successively as assistant general agent at Chicago, as general agent in the passenger department with the same headquarters, as general agent at Denver, Colo., and as general agent in the freight department at Chicago, until 1917. In that year Mr. Hoops was appointed assistant general freight agent and division freight and passenger agent at Chicago, holding these positions until 1921, when he was advanced to general freight agent, with the same headquarters. He had held the position of assistant freight traffic manager at Chicago since 1929.

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The Union Pacific's "Portland Rose" at Huntington, Ore.